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AGRICULTURAL SCIENCE—MECHANICAL TEXTURE OF SOILS.

At a late meeting of the Farmers' Club held at the American Institute, New York, Professor S. W. Johnson of Yale College, furnished an able essay on soils, in which certain views were presented, which together with some facts, connected with our own observation upon the mechanical treatment of certain sandy and gravelly soils, seem to require the light of science to explain. We copy from the essay, the following remarks:—

"The labors of chemists to discover positively all the causes of the fertility of soils, have not yet met with conclusive success. The mechanical structure of soil is of primary importance. Naked rock grows lichen—the same rock crushed into coarse grains, grows a much higher order of vegetable—pulverized fine, the cereals grow in it. Geology, chemistry, botany, physiology, meteorology, mechanics, hydrodynamics, heat, light and electricity, are all intimately combined in the grand process of vegetation. There are sandy soils in our Eastern States, which, without manure, yield meagre crops of rye and buckwheat; but there are sandy soils in Ohio, which without manure, yield on an average, eighty bushels of Indian corn an acre, and have yielded it for twenty to fifty years in unbroken succession; the ingredients of these soils being, by chemical analysis, the same. At present no difference is known between them, except the coarseness of the particles; the first being coarse, while the Ohio sand is an exceedingly fine powder. The power of soils to attract and imbibe moisture and oxygen, was well shown by Schubler, of Hoffen, forty years ago. Of thirteen different soils, quartz sand absorbed in thirty days over 1-1000 parts of oxygen and no moisture, while humus absorbed 13 of oxygen and 120 of moisture."

There is a piece of land, embracing sixty or eighty acres, within three miles of where we now write, of the character of the fine sandy land of Ohio, as referred to by Professor Johnson. While in pursuit of land some years ago, we became acquainted with this piece, and from a knowledge of the character of the sandy land in some of the Eastern States, we were induced to place a very low estimate upon our neighbor's land. This land has since been sold and converted into a vegetable and fruit farm, and has proved to be one of the most sure and productive pieces of land with which we are acquainted. Of course, it is extremely warm and brings to maturity vegetables and fruit, some days earlier than any other land in the neighborhood of the city; and for the growth of grapes, the fruit is almost invariably sound, while that grown in any other character of soil is subject to rot; and the capacity of this soil to retain moisture is not surpassed by any other soil combining any proportion of loam that we have seen. Probably the great secret of the fertility of this soil, lies in its capacity to absorb and retain heat, moisture and various gasses essential to vegetable growth; and this is in consequence of the finely divided character of its particles, which renders it one of the most perfect and desirable soils to cultivate.

Last summer, while exploring certain por-

tions of Long Island, in the State of New York, which is noted for its light, sandy and gravelly soil, we visited a gentleman's garden and nursery, to witness the effects of *trenching* a light, open, porous soil—purely *sand, coarse gravel and stones*, with a thin surface soil. This ground had been trenched, and entirely inverted to the depth of three and a half feet. Upon the surface a moderate dressing of manure had been cast and spaded in. On the trenched portion, were growing various nursery plants, grape-vines, roses, &c., of great luxuriance; but the most remarkable feature was a few rows of cabbage, upon the same prepared ground, no head of which was less than ten inches in diameter, up to a much larger size, all firm and solid, while in the adjoining rows, planted the same time upon precisely the same soil, manured in the same manner, and spaded to the ordinary depth, *but not trenched*, not one cabbage had headed, but still remained large, loose plants.

In another fruit garden and vineyard of some magnitude, a mile distant, upon similar soil, but more sandy and less gravelly, resting upon a kind of marl or hard-pan bottom four feet below the surface, this ground had been trenched in a similar manner, with an incorporation of a compost of peat, stable manure, lime, ashes, &c.; and during three months' travel among gardens, we saw no more vigorous grape-vines, dwarf pear trees, or other fruit trees, even upon the richest soils of Western New York.

We had supposed that trenching such light thin soils, was worse than labor lost. But these instances prove to the contrary, and afford conclusive evidence that without this preparation of that kind of soil, gardening and fruit growing would not pay the cost. It also establishes the most important fact in agriculture, that *the more perfectly the mechanical disintegration of the soil is effected, whether light or heavy, the more perfectly it is adapted to vegetable growth*; and if such results are the effects of the deep culture of light soils, how much more important is it that more tenacious soils be deeply and thoroughly pulverized! The more perfect and free the circulation of heat, moisture, and the atmosphere, and gasses in the surface soil, and in contact with the roots of growing crops, the more perfect will be their development.

The largest crops of corn we have on record, were grown upon the light sandy soils of the south; although upon thin, poor soils—but owing to their open, porous texture, with moderate dressings of manure and *timely rains*, these soils produce heavy crops. But such loose, sandy soils cannot be depended on, because of the uncertainty of a due degree of moisture in all seasons. Heavy soils are more retentive of moisture, and are more sure to afford regular crops; but the crops upon these soils would be greatly augmented by a thoroughly broken and pulverized surface. A deep and thorough breaking up in the Spring is not sufficient for Summer crops, but the surface must be kept loose and porous, during the growing season, or until the time of "laying by." In this lies the great secret of large crops.

IMPROVEMENT IN AGRICULTURE.

Every observing farmer of twenty or more years' experience, who will look back upon the system of farming practised in the time of his youth and compare the farm implements of the present day with those of earlier times, will witness a vast improvement, one that has grown so steadily upon us, that all its advantages are not at first realized. Yet, notwithstanding these vast changes for the better, there are thousands of farmers who still continue to plod along in the old beaten track of their forefathers, and regard with suspicion any innovation upon their former modes and practices of farming. With them the idea of manuring land is labor wasted. The accumulation in their yards and stables is suffered to wash into the valleys and horse ponds, or the stable is moved to get out of its way. The straw heaps are burned to save the labor of scattering the straw upon the bald places and worn out fields, or to avoid hauling to the stables for litter for the horses; and as to bedding for cattle they require none. They always have found their own beds and sheltering in the fence corners, and have done well enough, and any labor bestowed in that direction is only lost. This new idea of land draining with them is simply nonsense. Only wait, and all the water that delays the spring work but a few weeks will dry up itself, and this unnecessary expense of underdraining will be saved. As to subsoil and trench plows, nobody ever heard of them twenty years ago.—This is book-farming and will do for those who have not been brought up to the business, for whose especial benefit agricultural books and papers are printed. As for themselves they learned the business from their fathers, and their fathers and grandfathers were among the

best farmers of their times, and they never took agricultural papers. They never paid their money for them, in fact they never found time to read. But while these old farmers retain their prejudices and follow their own course, content with thirty or forty bushels of corn to the acre, or eight or ten bushels of wheat, there are thousands of others who have been raised to other pursuits, and who, from various causes, have adopted the business of farming.

Among those who constitute a portion of this class are the sons of merchants, who have learned from experience and statistical records that more than ninety-five merchants in a hundred have failed in their business, and advise their sons to adopt a surer and safer calling. There are others who adopt it from motives of health, and thousands of others who have spent the vigor of manhood in the counting room and who gladly forsake it for the peace and quiet of the farm. These enter upon the work without prejudice, and seek, through every available means, to acquire a correct knowledge of the science and practice of farming, and to study the mysterious and beautiful laws that govern animal and vegetable growth and development.

There are large numbers of the most active and enterprising men who have spent the better portion of their lives in cities, in active mercantile pursuits, and who, perhaps, have acquired a competency, as well as thousands of others, who found, at a late period, that they had mistaken their calling, and failed in business, who have secured land, either near to or more remote from the cities, and are now engaged in profitable farming. The opening of the numerous rail roads, connecting the cities with almost every section of the country, has done much to invite this class of men to secure for themselves country situations and farms. These, without any previous knowledge of farm operations, seek an insight into the routine of business, through the agricultural books and papers of the day, and at once enter into all the substantial improvements of farm management, and the introduction of all the most approved farm implements and labor-saving machines. With their previous knowledge of business, and their systematic calculations of *profit and loss*, they know at once how to apply this knowledge to the operations of the farm, and they at once become successful and progressive farmers.

It is to this class of intelligent men—including a portion of young men, who have been raised with some knowledge of farming, and who, in the exercise of good sense and common observation, have discovered that the world does move—that the country is largely indebted for the degree of improvement that is now witnessed in various sections of the country. The highest premium awarded by the Agricultural Society for the best conducted farm in the great State of New York, in 1857, was to a young man who was educated in the counting room in the city of New York, and when he commenced farming had no previous knowledge of the business; and having no prejudices to overcome, he had nothing to do but to adopt the most approved system of management, and to bring his farm up at once to the highest degree of fertility, and to secure the most profitable crops in return.—This farm in its natural condition would not yield one-half an ordinary crop of any of the products of that section of the State. The soil was a heavy, cold clay, and of course saturated with water, and it would not, in that condition, pay the cost of cultivation. But under the guidance of an enlightened understanding the surplus water was drawn off through more than sixty miles of continuous drain tile, and the most thorough and systematic course of manuring was adopted, and within five years from the time he came in possession of it, it was rated among the best farms in the State, affording the largest crops of wheat, corn, oats and hay, per acre, of any farm in the State.—This is only one of a thousand similar, though, perhaps, less marked instances, of what can be done in the improvement of the soil and the increase of its products.

It is, perhaps, to be attributed more to the fact that so little intelligence has been exercised in former times, unaided by books and the necessary means to secure the benefits of an improved agriculture, that the calling has been considered one of inferior rank. But under the influence of that class of persons to which we have referred, we expect to see no calling or profession esteemed more honorable than that of the farmer.

The improvements that have begun, and under the various influences that are operating to extend them, will go on in an increasing ratio, until the arable portion of our land will afford a return of double the present acreable products. And were our politicians guided alone by the most honorable and patriotic motives, instead of seeking to elevate their own parties into power, and to advance their own private interests, much might be expected through enlightened legislation to advance this greatest of all industrial interests.

THE ADVANTAGES OF GOOD SOIL.

In the last number of the *Valley Farmer* was an article showing the importance of rich soil in giving greater weight and worth to the grain raised on it. The principle is equally good as applied to grass, roots, vegetables of all kinds, and every species of vegetation. The vegetable productions of a rich soil are stronger, richer, heavier and more nutritious than those of a poor soil. Pound for pound they are worth more, because they will nourish and enrich more animal life. The animals of a productive soil are larger, fatter and thriftier than those of a poor soil. In the native wilds of the earth it is always found that a rich soil is always inhabited by a large and flourishing fauna. The animals correspond to the plants, and both to the soil. Poor soil has a thin and stunted vegetation, and a light and scrawny fauna. Animal life is dependent on vegetation and flourishes with it.—This is demonstrated in the forests and prairies of the whole earth. It is patent to natural historians and men of science. It is for farmers to accept this truth and practice upon it. They must expect the best agricultural results only on the best soil. Rich grains and grasses, and large, fine stock will not grow on thin, poor soil. It is a law of nature, and nature will not change to suit poor farmers. The great secret of good farming, therefore, is good soil, or good soil-making. The soil is the farmer's mine of gold. The soil is his bank, his treasury, his source of wealth and power. All the labor expended on the soil pays a heavy compound interest. What is put into the soil to enrich it is money put at interest where it cannot be lost. The soil is the farmer's chief concern. He may do what he will in his choice of grain and fruit and stock; if he neglect his soil his results will be small; thin harvests and poor stalls will be his reward. The best blooded animals will degenerate on a barren or semi-barren soil. The best grasses and grains will yield but a small product. Vain are all efforts at agricultural excellence on poor soil. The soil must be enriched and pulverized and irrigated and drained and put in complete order, or it will not do its best work. Poor soil, like a poor tool, is a poor thing. Do the best you can with it and you do but an indifferent job. Soil is the source of human wealth. But I have not yet said the best thing for a good soil. It produces strong and vigorous men. You may judge of a race by the soil on which it grows. A fresh, hearty, exuberant soil produces corresponding men. A hard, thin, unfruitful soil produces a dwarfish, degenerated stock of humanity. The rule is, that vegetables, animals and men are subject to the conditions of the soil on which they live.—Confine a full grown, harmonious and vigorous race of men to a thin, poor soil, for a few generations, and it will degenerate to small, scrawny, powerless specimens of humanity. Put a small and stunted race on a rich and abundant soil and they will make a corresponding improvement. There is a great law which subjects all animate existence to the conditions of the soil. This law farmers must learn to respect.

SAVING BLUE GRASS SEED---AN IMPROVED METHOD.

Within the last twenty years, the trade in Kentucky blue grass seed has increased to a business of considerable magnitude in the market towns of the "Blue Grass regions" of Kentucky. We presume that the amount of this seed, gathered and sold, in the counties of Fayette, Bourbon and Clark, exceeds $20,000 annually. This seed goes into the hands of the city dealers, and after being "cleaned" is sold at an average advance of 33 to 50 per cent., and finds a ready market in the new western and north-western States, and a considerable quantity is also sold by eastern seedsmen. The method of gathering this seed, until a very late period, was after the most primitive fashion—merely stripping the seeds from the heads in the fields by hand. Subsequently a slight improvement was made upon this slow mode of gathering. A hand-comb was brought into use, by which more than double the quantity could be gathered in a given time. At a later date, another step in the way of progressive improvement was made, and a broad comb, drawn by horse power, was substituted. With this machine fifty or sixty bushels of seed can be gathered in a day, by one man and horse, the horse being required to stop every four steps, for the man to relieve the teeth from the accumulated seed between them with the aid of a hoe. Repeated attempts have been made to improve machinery to strip the seed from the head by an entire automatic operation, but, thus far, without success. But since the introduction of the mowing machine and the improved horse power and thresher, persons residing in other States have succeeded in gathering and cleansing the seed with great facility with these machines, and in a much better condition than by any process formerly employed. We do not know that we can do our farming friends a better service than to describe the method of operation.

The seed should be allowed to stand until fully ripe. It should then be cut with any of the improved mowing machines, or, if the grass is long, it may be cut with a reaping machine, and bound and set up in the field to cure. But, if mown, it should lay a day or two in the swath, and then be raked and threshed at once.

The best machines for this purpose are those of the rail road style, and the only change necessary to make in the thresher from that employed in threshing grain, is to raise the *concave*, which with this kind of thresher is easily done, so as to allow the teeth in the cylinder to mesh more deeply. The longer the straw is cut the better it will thresh, because the mere head is too light to thresh clean without an increase in the bulk of straw. In good weather a large quantity of seed can be threshed in this way in a day, and the seed will command a much higher price in market, than that which is gathered and cleaned in the ordinary way. If farmers will adopt this method, they can secure the seed in the most perfect marketable condition, free from the great accumulation of chaff and straw that now goes to market, and save to themselves the profit of cleaning and the advance in price upon a superior article, and all with less labor than they now bestow in their present method of stripping.

The method practised in cleaning by most dealers, is rubbing by hand upon a stationary wire riddle—a slow and tedious operation, not at all in accordance with the progress of the age. The writer some years since invented and patented a simple machine for the purpose, with which from 50 to 100 bushels can be cleaned in a day in the best manner. Those farmers who continue to gather the seed in the ordinary way might realize 50 per cent. more profit on their seed by cleaning it with a machine of this kind before sending it to market.

The method of saving and cleaning clover seed, requested by several correspondents, will be described in the *Valley Farmer* for June.

NEW METHOD OF PRESERVING BUTTER.

A patent has been granted to W. Clark, of London, England, for a new method of treating butter, which promises to be valuable. It is as follows: After churning, the butter is worked in the usual manner. It is then placed between linen cloths, like any other substance to be pressed, and submitted to severe pressure, which removes the whey and water. It is then covered with clean white paper, which has received a coating on both sides with a preparation composed of the white of eggs and salt. 15 grains of salt are allowed to each egg. The paper is dried, and then heated before the fire or with a hot iron just before it is applied to the butter. It is claimed that butter treated in this way will keep two months without any salt, if placed in a cool cellar. Any ordinary cheese press, or the presses accompanying the portable cider mills, now common, will answer the purpose. Removing the water from the butter, and the application of the prepared paper, which serves to exclude the air, will, undoubtedly, secure a decided improvement in the keeping qualities of the butter.

PROFITABLE FARMING.

The first premium was awarded by the Norfolk County, Mass., Agricultural Society to E. & J. Sias, for the best and most profitably managed farm. The farm consists of but *twenty-nine* acres, and the receipts and expenses are as follows:

For milk sold,	$277 67
For milk used in two families,	39 00
For beef and pork,	258 00
For pigs sold,	16 00
For poultry and eggs,	22 00
For vegetables,	757 00
For hay,	128 00
For labor of the owners and team for others,	198 00
Total,	$1695 67

The expenses were—

For 39 loads of manure,	$144 00
For grain bought,	295 00
For labor hired,	114 00
For shoats bought,	15 00
For blacksmithing,	30 00
Total,	$598 00
Balance,	$1,097 67.

The above does not include the amount of grain, vegetables, &c., used in the two families of the owners.

Thus it will be seen that a clear profit of nearly $1,100 is realized from less than thirty acres of land in a State that is generally rocky and poor. A sum, probably, greater than is realized by a majority of the owners of rich farms in the West, containing one hundred or more acres.

THE WEEDS.

Now is the time to work bravely. Conquer the weeds before they have become established. If you don't, they will conquer you and your crops. When young and weak they are easily subdued, but each day they are permitted to

stand, they grow in strength and power. One day's work now is worth half a dozen by and by. See that the plows and cultivators and horse-hoes, are all kept busy now. This is no time for laggards. Rest when the crops are safe, and not till then. In conquering the weeds you are keeping the soil well pulverized and your cultivated crops are deriving a great advantage. One cultivator is worth a dozen hoes. You cannot work among your cultivated crops with this implement too much while they are young. The weeds if not eradicated will suck the life-blood away from the soil, rob the crops of moisture and nutriment. They are enemies to good farming that cannot be too foully dealt with.

HEALTH.

A great deal of sickness frequently might be avoided by a few hours' labor. There is always some cause to produce sickness, and that cause should be removed. At this season of the year, the premises should be thoroughly cleaned.—Commence if you have not already done it, at the cellar first. See to it that all decaying vegetation is removed—clean out every part of it. If your cellar is not drained, and water comes into it during heavy rains, by all means have a drain dug so as to take off the water as fast as it enters. Stagnant water in the cellar is a great breeder of disease. Let there also be a free passage of air through the cellar by taking out the windows so the air can circulate freely.

Another thing to be noticed is, the offensive water that comes from the sink. Have it carried off some distance from the house, by a tight drain. Don't let the offensive odor come in contact with the olfactory nerves of the inmates of your family. If there are stagnant ponds near your dwellings, they should be drained.—Remove, as far as you can, every cause of disease, be temperate and regular in all your habits, avoid exposure--and sickness, as a general thing, will be a stranger to you.

A HOLE IN THE POCKET.

A great many men have a hole in the pocket, and so lose all the little change they put in.—And the worst of it is they do not know it—if they did, they could mend up the hole and so put an end to the loss. Every day they are minus a few dimes, and they wonder how they come so short. When bills are to be paid they cannot imagine how they came to be so short of change. At the end of the year they are surprised to find so poor a footing up. They work hard, rack their brains on plans, and still they do not get ahead much. Bills accumulate, income diminishes, and still they do not discover the hole in the pocket.

One man has bad fences, gates and bars.—The cattle break through every now and then and destroy crops, and occupy time in driving them out. The pigs creep through the holes.—The geese find many entrances. The horses get away. The boys and men and servants and dogs are kept on the run after roguish cows and jumping horses and climbing hogs. The stock becomes uneasy and does not thrive. The crops are injured. The fences are often broken down. Time is consumed. The trouble is—that man has a hole in the pocket. One man has no sheds, nor barns, nor granaries, nor tool-houses. His hay and grain he stacks. His vegetables he buries. The rains spoil much of his hay. His grain is much injured and wasted. The rats eat his corn; and the damp weather moulds it. His potatoes rot. His pumpkins are destroyed.—His apples do him but little good. His tools are rotted and rusted in the open weather. His stock is chilled and stunted for want of shelter. His trouble is a hole in his pocket, out of which slips all his profits, much of the fruits of his hard labor.

One man has poor plows of the senile stamp of his ancestors. He only skins the land with it. He can't afford a modern plow. He don't believe in sub-soiling. Draining is the nonsense of scientific fools. Drills are a humbug.—Deep plowing would spoil the land. So he plows and sows as his grandfather did, on the worn-out soil of his venerable ancestor. He has a hole in his pocket, and will have till he takes up to the importance of good tools and good culture of himself and soil.

One man don't take a paper; can't afford it; has no time to read; don't believe in book-farming; likes the old ways best; denies all the stories he has heard from rumor, about large cattle and crops and profits; doesn't believe in new notions. For forty years he has planted his corn on the same ground; sown wheat in the same field; pastured the same land and mowed the same meadows. He has heard of "rotation of crops," but doesn't know what it means or care to know. A bad hole has this man in his pocket.

And who hasn't got a hole in his pocket?—Reader, haven't you? Look and see. Is there not some way in which you let slip the dimes you might better save; some way in which you waste time and strength and mind? If so, then

you have a hole in your pocket. Indeed, many a man's pocket is like a seive. Whose pocket is a treasury, safe and sure?

A WET SPRING.

We have had a rainy Spring. The soil has been too wet to cultivate a large portion of the time. Yet we have been pained to see many farmers plowing and putting in their crops, when the soil was almost saturated with water. Poor crops will be the result. It will take the land a long time to recover from the evil effects of working it when too wet. The ground should never be worked when it will not pulverize well. Better put crops in later, when the land is in good condition, than a couple of weeks sooner, when it is in an unfit state to cultivate. Much larger crops will be obtained and no injury will be done to the land.

THE PROPER SEASON FOR CUTTING TIMBER.

Various opinions have been given in regard to the time or season for cutting timber, calculated to secure the greatest durability and strength. Some have advocated the Fall, others Winter, and again others have claimed that Summer is the proper time, each according to his own notions and limited experience and observation. The weight of testimony predicated upon true physiological observation and experience, has demonstrated that the period in Summer, when the growth of the tree, for that season is approaching maturity, is the most favorable time to cut the timber, whether for house, ship or railroad timber, posts, &c. At this period the circulating fluids of the tree, having been chiefly exhausted in the growth and development of the leaves, branches, fruit, &c., there is for a time, a season of comparative rest, and the woody fibre for the season being fully matured, it contains less sap—and hence this is the best time to cut the timber; this period is July and August, according to latitude and season. After this season of growth and rest, nature again begins to treasure up in the cells of the tree the material elements for the growth of the succeeding season—these elements are starch, sugar, &c., combined with the sap, and constitute the active principles that lead to fermentation, which is the first step towards decay. But as Spring advances the buds begin to swell, a brisk flow of sap takes place, the shoots put forth with vigor, the fruit and wood are matured, leaving the cellular tissues comparatively empty, and consequently best suited for mechanical purposes.

When timber is cut while its pores are filled with these elements of growth and nutrition, it is the practice of naval architects to "dock" it, that is, place it for months or years in water, either fresh or salt, in order that these fermentable matters may be dissolved. The process known as "Kyanizing," is expelling the sap and filling the pores of the wood with mineral ingredients of various kinds, in order to check the tendency to fermentation and incipient decay. But where a due regard is paid to the proper period of cutting the timber, these processes, not always available, are the less necessary.

DO IT WELL.

One of the first lessons to be impressed upon the youthful mind, in whatever he undertakes, is, *do it well.* It is the magic key that unlocks the doors to success in every department of business. If we trace back the history of every man who has achieved success or greatness in life, we shall find that the disposition to do well and thoroughly everything undertaken, was the predominating element of his character. But in no department of business is it more important to heed the caption of this article than in farming operations. If it were heeded we should not see so many crops put in and harvested and marketed in the bad manner they are. We should not see so many farms yearly becoming poorer, nor so many poor and almost half-starved animals. We should not see fences going to destruction, and such poor accommodations for stock during the inclement winter. We should not see so many trees improperly planted, and almost totally neglected afterwards. But we should see, in the place of these, well kept farms, and everything about them indicating that an intelligent, enterprising, thorough-going man was the owner of the premises. Such a farmer would do well whatever he did at all. He would cultivate no more land than he could cultivate in the best manner. If he had a large farm, he would have hands enough and teams enough, to give the best culture to it. What crops he put in, would be put in after the soil had been well prepared and was in the best condition, and then none but the best seed would be used. What stock he had would be kept in the best manner. The buildings would be built in good taste, and would be the best his means would afford. Everything would bear a neat and cheerful appearance. Such

a farmer would have nothing done slovenly. Neatness, system and thoroughness, would be witnessed on every hand. We hope our young farmers will determine that in everything they do hereafter they will *do it well*. They will never have cause to regret it, but will ever look back with satisfaction upon their labors.

LETTER FROM FLORIDA.

[Written for the Valley Farmer.]

MESSRS. EDITORS:—I have thought some observations on the soil, climate and agricultural products of Florida would be acceptable to some of the readers of the *Valley Farmer*. This poor, remote and early settled State is little better known in Missouri than Kamtschatka.—Many are under the belief that there is much good and valuable land in Florida yet to be reclaimed. From much inquiry, information and inspection, I am led to the belief that there is not an acre of what a Missourian would call first rate land in the State, except some marl beds. Nearly the whole peninsula appears to have been under water at comparatively a recent date. Shells are found in abundance all over the peninsular part of Florida, which appears like a great sand bar reclaimed from the ocean, and grown up with stunted shrubbery, tall swamp grass, and much good pitch pine, cypress and live oak. St. John's river is an anomaly in the way of rivers; it rises in the south and runs directly north, without a solitary alluvion bottom or an acre of fertile land in its whole course. It is one of the most beautiful and navigable rivers in this Union. Vessels of 200 tons burthen can cross the bar at the mouth of St. Johns, and ascend for 260 miles to Lake Harney, without any kind of obstruction to navigation, with a current of only two miles per hour. The river is about one mile wide from the mouth to Jacksonville, 25 miles; to Patlaka, 75 miles, 3 miles on an average. Thence to Lake Harney, 160 miles, from 100 yards to 15 miles wide. This river abounds in excellent fish and has the best alligator shooting of any river in my knowledge. Our party in ascending the river killed 30, from 3 to 13 feet long. The mate of our boat informed me that he killed 500 last year. It was a continued shooting all day as fast as they could reload.

This ancient and effete town is a curiosity in its way. It is pretty much as the Spaniards left it, and going rapidly to decay. But for the resort of invalids the town would be deserted, since the loss of their orange groves which produced them a handsome revenue. If the orange had succeeded as well since 1835, as it did for one hundred years previous, some would have had an income of $10,000 to $20,000 per annum. An insect kills them now as fast as they are planted. The country around St. Augustine is uninhabited. Nothing is raised here for the support of man or beast except garden vegetables. Fish and oysters are the principal subsistence of the poor. Corn, hay and oats all come from New York, and corn is selling at one dollar and fifty cents per bushel, by the sack, and retailed out by the quart at 10 cents. The average product of corn in Florida, per acre, is 8 bushels, and 15 bushels the maximum, and one bag of cotton, weighing about 350 lbs., and generally worth $100 per bag. Thus live stock are on a par with the soil—meager and lank. Native horses are about the size of Missouri yearlings. Very little effort is made to improve their stock. There is a peculiarity in all the meats of Florida. It is dry, hard, and without flavor. Even venison is dry and tasteless. All of the drinking water in middle and southern Florida is warm. The earth and water, usually are, in winter, at a temperature of 73°. It will cool some, after it is taken out of the well, and stand several hours. Winter here is the best season for gardening, such as peas, cabbage, lettuce, radishes, onions, celery, &c.—The cotton planters were never in a more prosperous condition. The scarcity of money I never hear mentioned. I passed through Tennessee, North Alabama, Georgia, to Charleston. On the entire route the cotton crop was good, consequently money is plentiful. S.

St. Augustine, Fla, Mar. 2, 1859.

[Written for the Valley Farmer.]

WIRE FENCE.

In a recent number of your valuable journal an article on wire fences has attracted my attention, and perhaps my experience may prove of interest to some of your readers.

We, in Northern Illinois, had a range for our stock some years ago, which has been greatly diminished of late; but some of our cows not yet very old remember the old habits, and are greatly annoyed by fences, and their owners by having them broken. My cattle have been a source of much vexation in this respect, and having sufficient land seeded to timothy and clover, I determined to build a fence which even these unruly old cows should passively at least acknowledge to be a fence.

My fence is built of three sizes of wire, No. 7 for upper, No. 8 next, and the lower two of No. 9. Having determined the line of fence, first a stout post about 6 by 8 inches square, should be set in the ground about 3 1-2 to 4 feet, having a long brace, say 12 feet long. Forty rods is plenty long for one stretch; if the land is very rolling, less would be better; here another post same size as first to be set with brace to correspond, one of these may be called the key post, the other a tie post. Now stretch one wire to be used for a line to set the fence straight; now have a firm post set 2 1-2 feet deep every rod; next have what I term a spring post 4 feet long, and 1 1-2 by 3 inches, to be fastened by a wire to a small stake set firmly in the ground, to alternate with the solid post. After all the posts have been set, use a staple same size of wire to fasten each wire to every post, also the same to spring post, fasten the end of each wire to a cast key, so constructed that any square piece of wood, say one and a half inch square, may be used as a lever; or construct a common wooden roller with a similar leverage and tighten the wires. Wind and the rubbing of stock, will not affect this fence nor move the solid post

at all, because the wires will give a little, and the middle or spring post prevents the wires from springing apart so as to admit of a creature passing through, and the whole fence will rebound and drive back any intruder of the cattle or horse tribe. My fence in my own case has proved a success, and although horses and cattle have broken the common fence seven rails high, well staked and ridered, and post and rail fences also, they have never meddled with the wire fence and always remained on the right side of it. Setting the posts wider apart and not using spring posts, and keeping the wires slack has brought wire fences into bad repute. I like them so well that I intend to make another mile this Spring. Posts at ten cents each for the large ones, and the ordinary price of lumber for the spring post (which should be sawed of the best strait grained oak), were bought at first hands and for cash, and this fence may be built for from 65 to 75 cents per rod, and last twice if not three times as long as any other, the only thing to wear out would be the posts. If the wire could be painted it would prove a benefit. It should be the best *annealed* wire. Why cannot Missouri furnish all we need in the West?

Any further information will be given cheerfully by OLD FIRKIN.

P. S. I had almost forgotten that upon the well known principle of heat expanding and cold contracting, the wires should be tightened in Summer and loosened in Winter.

[For the Valley Farmer.]

CHEESE MAKING.

In the manufacturing of cheese it is necessary that all vessels used about it should be kept sweet and clean. Strain the night's milk into the tub or vat, and if the weather be warm it should be cooled as soon as may be, by setting the heater or tin pails into the milk, filled with cold water from the well, and in severe hot weather it will need changing before bed time. This will keep the milk sweet until the morning's milk is ready to be added. The night's milk should be warmed so that the whole will be about 84° Fahrenheit. Then add rennet enough to curd the milk in 30 minutes. Then cut the curd and let it stand 15 minutes and break it up fine and let it stand 15 minutes. Then draw off the whey. Set aside some for cooling and some in the heater on the stove for scalding. In 20 minutes commence scalding and scald three times, one to 90 deg., 95 deg., and 100 deg., 30 minutes between each scald, making 1 1-2 hours from the commencement of scalding, keeping the curd fine during the process of scalding. Then draw off whey and add the cooling whey, and when well stirred draw off the whey. Dry and salt the curd at the rate of a common tea cup of common salt to 15 lbs. of curd, if intended to be kept through the summer, and one tea cup of salt to 18 lbs. of curd if sent to market in 30 days. As soon as cool, the curd should be placed in the hoop and in the press, which it is very important to have a good one that will press all the whey from the curd. Turn the cheese at tea time (5 o'clock), and it will be ready to take from the press the next day when the next curd is ready for the press. When taken from the press bandage the cheese and turn and grease them every day. H. C.

[Written for the Valley Farmer.]

EDS. VALLEY FARMER.—Permit me to suggest a much easier and more efficient method of killing Burdock and other noxious weeds than that suggested by you, of frequently cutting them off. It is simply, so soon as they make their appearance above ground to cut them off at the crown of the root, and cover the crown with common salt. My experience is, that they will never sprout again. Care must be taken not to spread the salt over any other vegetable matter necessary to preserve, as it is alike fatal to all vegetable life, when coming in contact with the sap. AN EX. FARMER.

Lousiana, Mo.

LARGE FARMING OR SMALL.

Some merchants, as their business increases, employ more clerks, and do well just about in proportion to the number employed simply because they have the business capacity to control a concern that would be unwieldly to others, and often to others who are entirely their superiors, in all the most important attributes of *manhood*. With farming, it is precisely so, with a single exception, and that is, that it is vastly more difficult and requires rarer powers to manage a great farm successfully than a great store. Some of our millionaire neighbors in bank and store will not believe this, but it as true as it is that they are rich, and that they are made so by other men's labor, and do not deserve their wealth half as well as the working farmer does his. If a farmer is conscious of a capacity to do largely in his line, why may he not undertake it as well as the merchant?

But many merchants, as their business grows, do not increase their force employed, and actually do better with a small store and few clerks, doing little more business than they can do with their own hands, than they could by larger operations. Not a few of these are the best of men. They know themselves, know they were not born to command, and so keep within their proper depth. It is so with farming. To manage a thousand to a ten thousand-acre farm, employing a vast amount of labor, being everywhere present, keeping the irons all hot and burning none, requires a combination of patience and energy, of activity and coolness, of kindness and commanding force, which few men possess. Otherwise, we might as well look for from three to five million-dollar farmers all over the country, as for three to four million-dollar leather stores, down in what is called the swamp of this city. Things being as they are, a vast majority of farmers will do better on a hundred acres than on more, just as a majority of merchants will do better with a small store and one clerk than they possibly could with a

large store, a fleet of ships, and a thousand clerks and other employees. But all this, is no reason why farmers educated well and of the requisite mental force may not undertake great things in farming, as others of smaller calibre do in commerce.—*American Farmer's Magazine.*

MODEL AND EXPERIMENTAL FARMS.

We learn from the *Southern Farmer* that there is a "probability *that the Model Farm will be given up.*"

This farm is located near Petersburg, Va.—It belongs to the Union Agricultural Society of Virginia and North Carolina. It was the first farm of the kind established in the United States. Its failure, however much to be deplored, is nothing more than might have been expected.

For a few years past, there has been a very general and praiseworthy desire, on the part of our most intelligent farmers, for scientific information in regard to the rationale of agricultural practices. This desire for more denite knowledge led to a simultaneous movement in various parts of the Union, in favor of the establishment of "Model and experimental Farms." Attempts at establishing such institutions were made in Virginia, Pennsylvania, Massachusetts, Michigan, New York, Maryland, and Iowa. We hope every one of them may succeed, but shall not be disappointed if they all share the fate of the one in Virginia.

Those who originated, or have control of these institutions, in many cases, appear to have what we regard as erroneus views of the objects of an experimental farm. The very name, "*Model and Experimental Farm,*" indicates a lack of definite ideas on the subject. No farm can be both a *model* and an *experimental* farm. You might as well expect to have a "model" and profitable orchard of seedling apple trees, as to have a model—that is, a profitable—and experimental farm. Among the seedlings you might have two or three varieties that are better than any yet known; but the great majority would be inferior to those which have been previously tested and recommended by experienced pomologists. So on an experimental farm, some of the experiments might afford better results than the ordinary practices which have been adopted by experienced farmers; but the majority of them must, from the nature of the case, yield results less favorable than the best practices at present adopted.

The worthy superintendent of the Virginia "Model and Experimental Farm," in his report, for 1855, wrote as follows: "I will only again express to your Board my increased and confirmed conviction that your experimental farm will ere long become self-sustaining if not remunerative in its results, notwithstanding the adverse and unfavorable opinions of many."

A small portion of a farm may be devoted to making experiments, and the profits on the other portion may be sufficient to defray the expenses of these experiments. But in this case the profits must be larger than they usually are, and the experiments must be such as any farmer can make—experiments involving so little care, labor, and expense, as to be of little value.

In instituting experiments, it is assumed that we are ignorant of the best system of tillage, of rotation, of manuring, and of general farm management; and the object is to discover it. To obtain this information, we must experiment—we must try various systems, modes of tillage, manures, etc. Some of these, as we have before said, may be better than those now adopted—many of them will be worse. These trials, too, must be made with great care and accuracy; they must be systematically carried on for several years, or we shall draw from them hasty and erroneus conclusions. Such experiments cause serious interruptions to the general business of the farm, besides involving much extra expense and labor. A good experimental farm, therefore, cannot be a profitable one. It is vain to expect it. The agricultural papers of England and this country have commented on the fact that the experimental farm near Dublin, Ireland, has entailed serious loss on its managers. But such a result should excite no surprise. The justly celebrated experiments at Rothamsted, which have done so much to increase our knowledge of agriculture, have cost Mr. Lawes, for many years, from $10,000 to $15,000 per annum. Boussingault's experiments in France could only have been carried out by a millionaire. Even the small and worthless experiment which Liebig made on his ten acre farm near Geissen, cost $3,200; and we may be allowed to say that our own experiments on corn, notwithstanding the New York State Agricultural Society were so kind as to award us their first premium of $75, entailed considerable loss; and such was also the case with the experiments on potatoes, Chinese sugar cane, &c. In this we were not disappointed. We never expect to see a self-supporting experimental farm; and the sooner such an idea is abandoned, the better for the cause of scientific agriculture.

The experiments which have been made on the Model and Experimental Farm in Virginia, were such as we might expect from an experimental farm which was designed to be "self-sustaining." Not one of them was designed to throw light on the principles of agriculture. They have mostly been trials of this, that, or the other guano, or super-phosphates of different manufacturers, the value of which a good analysis would determine as well as the most careful experiment.

We have said that any intelligent farmer can make—and hundreds do make—just as good experiments as the managers of any "self-sustaining" experimental farm. He must be a sad bungler who makes worse work than is described in the following record from the report of the superintendent of this model farm:

"On the 11th, two acres of pea fallow were sown, at the rate of 1 1-4 bushels of early purple straw wheat per acre; and on the 12th and 13th, eight acres of corn land were sown at the

same rate per acre, and with the same variety of wheat. One hundred and seventy-five pounds Peruvian guano per acre were applied to all. On the pea fallow the guano was well harrowed in, and on the corn land plowed under."

Now it is very desirable to ascertain whether wheat does best after peas or after corn; and it is also very desirable to learn whether guano is best harrowed in or plowed under. But the above experiments will not satisfy us on either point. If more wheat is obtained on the pea than on the corn ground, we shall not know whether to attribute it to the peas or to the guano being harrowed in instead of plowed under. And if more wheat is obtained from the guano plowed under than from that harrowed in, we shall be equally at a loss whether to ascribe it to the method of applying the guano or to the corn being a better crop to precede wheat than peas.

In these remarks we do not intend to censure the superintendent of this model farm. The position is an onerous one; and when several persons have a voice in the matter—each one wishing to carry out some pet experiment of his own—the result would be a compromise—one experiment counteracting the other, and the whole useless.—*Genesse Farmer.*

PHILOSOPHY OF RAIN.

To understand the philosophy of this beautiful and often sublime phenomena, so often witnessed since the creation of the world, and essential to the very existence of plants and animals, a few facts derived from observation and a long train of experiments must be remembered:

1. Were the atmosphere, everywhere, at all times, at a uniform temperature, we should never have rain, or hail, or snow. The water absorbed by it in evaporation from the sea and the earth's surface would descend in an imperceptible vapor, or cease to be absorbed by the air when it was once fully saturated.

2. The absorbing power of the atmosphere, and consequently its capability to retain humidity, is proportionably greater in warm than in cold air.

3. The air near the surface of the earth is warmer than it is in the region of the clouds. The higher we ascend from the earth, the colder do we find the atmosphere. Hence the perpetual snow on very high mountains in the hottest climate. Now when from continued evaporation, the air is highly saturated with vapor, though it be invisible and the sky cloudless, if its temperature is suddenly reduced by cold currents descending from above, or rushing from a higher to a lower latitude, its capacity to retain moisture is diminished, clouds are formed and the result is rain. Air condenses as it cools, and like a sponge filled with water and compressed, pours out the water which its diminished capacity cannot hold. How singular yet how simple the philosophy of rain! What but Omniscience could have devised such an admirable arrangement for watering the earth?—*Scientific Journal.*

THE GIANT FARMER OF THE WEST.

Mr. Jacob Strawn, of Illinois (says the Rockford *Republican*), has earned for himself the reputation of the Giant Farmer of the West. Twenty-seven years ago he came to this State a poor man. His operations were small at first, but continued to increase each year, until he had reduced over 30.000 acres of land to a state of cultivation. He has one farm of 7,800 acres, and another of 10,000. He has usually employed from 200 to 300 men and a large number of horses. Every year, until quite recently, he has stalled from 5,000 to 6,000 head of cattle, and kept other live stock in proportionate numbers. In this twenty-seven years he has made a fortune of a million of dollars, and he is still hale and vigorous to enjoy it. He has one corn-field in Morgan county, nearly six miles long, but has latterly been curtailing his business, and converting some of his real estate into cash. He is a monument of what patience, perseverance, industry and continuous exertion in one direction will do for a man who has determined upon the accomplishment of a certain end.

Weather Prediction.—Although we have no faith in the predictions of Thomas, the almanac maker, or any of the weather prophet fraternity, we will publish the information of a correspondent—J. Royal of White Rock, Ill., who professes to be able to foretell the weather one year in advance for any locality where there is an almanac calculated. Here is the prophecy: "The first half of April will be wet, the last half fair; the first week in May will be wet; the balance fair; the first half of June will be fair, the last half changeable; July will begin and end with a few days of changeable weather, leaving the middle of the month dry; August will have a great many wet days; September will set in fair, but the balance of the month will be changable, the last part being wettest; October changable, gradually increasing in wetness; November, like the preceding, only commencing fairer and ending wetter; December, fair weather." On this, we are told, we may rely, with the exception of September, where there has "to be added the extra stormy weather caused by the sun crossing the line." This truly depends on the prevailing winds at the time; if the winds be southerly the month will be wet; if northerly, it will be as dry as if the sun were at his extreme distance from the line.—*Scientific American.*

Every Inch of rain falling in the course of a year, is equal to a weight of rather more than 100 tons of water per each imperial acre. The mean annual quantity of rain in Detroit, is 28,300 inches, equal to nearly 2,900 tons of water falling annually on each acre of land. At Dearbonville Arsenal, Mich., the mean annual rain is only 21,610, the smallest quantity, or the dryest place, given in the *Army Metereological Register*, for the whole United States. The highest mean or wettest place is West Point, N. Y., where 64,670 inches of rain is the annual mean quantity, equal to 6,467 tons of water on each acre.—*Farmer's Companion.*

Stock Raising Department.

STRUCTURE AND PROPERTIES OF WOOL.

Dr. Henry Goadby, Professor of Vegetable and Animal Physiology and Entomology in the State Agricultural College of Michigan, is furnishing a series of articles for the *Michigan Farmer*, on the structure and properties of wool, in which the propriety of "crossing" is fully considered and practically demonstrated. The articles are accompanied with a large number of microscopic illustrations of the wool from sheep of the various breeds and crosses, including specimens from some of the finest imported and native bred animals in the United States. This work is calculated to throw a vast amount of light upon a subject of vital importance to the great wool growing interest, and to develop facts in regard to crossing the different breeds of sheep, of which more than nine-tenths of the farmers, as well as the manufacturers of wool, are entirely ignorant. The numerous specimens of wool, from various breeds of sheep and their crosses, illustrated in these articles, are represented as magnified 500 times, exhibiting the scales of imbrication, which constitute the felting or fulling properties of the wool in a very perfect manner. But the great value of these illustrations is the light they shed upon the consequences of crossing the various breeds. While the wool from unmixed breeds exhibit almost uniformity of size throughout the entire length of the fiber, other specimens from cross breeds show great inequality. For instance, a specimen from Silesian and Spanish parents is exhibited under the magnifier, which shows not only great unevenness, among the different fibers, but what is more striking, the *size of the same fiber is more than three times as large in one place as in another*, even within the small space coming within the field of the microscope, and this characteristic marks every specimen from sheep of mixed breeds.

The author thus explains the cause and manner of these irregularities and distortions in a single fiber of wool. He says: "In the wool of cross bred sheep, the hair of the male and of the female are both distinctly visible, in addition to which there is a general tendency to *amalgamation* or *fusion* of the wool of both parents; and this occurs not through the whole length of a hair, but *partially*. Hence the distortions. A hair, for example, may begin of the normal size of the sire; then it stimulates the mother's larger wool; then the father's is again imitated; then again the mother, and this continued throughout a hair, gives rise to those unsightly and inconvenient distortions always found in a wool of cross breed. It is this tendency to fuse, or amalgamate, always attended by exaggeration, that forms the objectionable characteristics of cross bred wools, so far as sheep are concerned."

While this peculiarity in wool is so marked, no such distortions are produced in the hair from a cross of the Cashmere or Thibet goat with our common goat. Specimens of the wool from the pure Cashmere goat, and its various crosses, from Mr. Richard Peter's herd at Atlanta, Ga., were examined. The author describes the sample from the pure Cashmere as follows: "The sample taken from the buck of the pure herd is, without exception, the most beautiful wool the author ever gazed upon—of a pure, dazzling white, lustrous, delicately soft to the touch, and silky beyond the power of expression, added to which it is 8 1-2 inches long. The microscopical examination justifies the anticipation of unassisted vision, for surely a more interesting and beautiful sight was never seen. The hairs range in diameter from a trifle less than one square of the micrometer to two squares, others a square and a half, another is one square and three quarters, and lastly two squares of the micrometer are attained. Beyond this it does not extend. The largest hairs of this remarkable goat are finer than the South Down sheep, only half the size of the Leicester, and certainly not larger than the finest Cotswold. The smallest hairs are positively finer than *ordinary* Saxon wool."

In regard to "crossing" the Cashmere with the common goat, the author remarks: "This damages them as much as sheep, yet the plan or method of exhibition of its effects is essentially different. In the goat there is no tendency to amalgamation or fusion, but on the contrary, each parent maintains its individuality; that is to say, that the offspring of a 'cross' has the distinct hairs of both parents, as perfect and well defined, as though they were obtained from the different animals. In the middle of a bundle of hairs, all obtained from the father (Thibet), will be found a number of strange, opaque, very large hairs—evidently of different structure, obtained from the mother; many of them measure as much as *eight*, and some of them *ten or twelve squares of the micrometer*, and while the hairs of the sire are singularly translucent, these gigantic hairs are black as Ere-

bus! At a glance it must be obvious that, however much the common goat may advantage by association with the Cashmere, the wonderful property and sterling qualities of the latter are degraded and lost by this mean association.—The disparity of size and structure between the wool of the Thibet, and the strong unsightly hairs of the common goat, is such that it certainly amounts to a specific difference, and this may account for the inability to amalgamate."

These investigations show how important is the light of science in the business of wool growing; that while the farmer blindly attempts to improve his stock of sheep, by "crossing," he is actually impairing the value of the wool.

The copyright of these articles being secured, we hope it is the design of the author to give them to the public in a specific volume.

STOCK RAISING IN THE FAR WEST.

The rapid filling up of the older western States and the consequent advance in the value of the lands that are so much needed for the production of grain, will have a tendency to bring into use the millions of acres of land lying west of Missouri, to the Rocky Mountains, and even beyond, for pastoral purposes. Cattle and sheep may be reared here to an unlimited extent, and all find a ready market in the great eastern cities at remunerating prices; and these prices, owing to the increase of population, beyond a corresponding supply, are constantly advancing. Upon these natural pastures cattle and sheep may be grown to maturity at a very small cost per head; and, if advisable, they may be fattened in those States that have become more strictly grain growing or agricultural States, before they are finally sent to their destination. In years past, the State of Ohio was regarded as the great pasture ground of the West, on which flocks and herds were reared in great profusion. But the tide of population flowing from the eastern States, and from Europe has so occupied the lands of this State, that they now yield tribute to the plow, rather than serve as extended pasture range for cattle. As the husbandman crowded upon the herdsman, the latter went further west. The vast prairies of Illinois invited him to bring his flocks and herds thither, where he might enjoy almost boundless space, covered with luxuriant grass, planted there by the hand of the Great Creator, and perpetuated by his care, and to be enjoyed without cost, free as the air they breathed.—From Illinois, other States, more western, were similarly occupied; but in the rapid progress of the development of a mighty republic, the wild pastures are rapidly giving place to cultivated fields and the production of the cereals; railroads traverse in all directionss, and the steam whistle is heard in almost every county, where but a few short years ago the country was only occupied by the red man and his favorite game. But as the mighty tide of population swells westward, there are still millions of unoccupied acres, which may, for years to come, be used as pastures, and on which may be bred and reared stock, cattle, horses and sheep, that will afterwards be fattened in the more eastern, grain growing States, and sold in the great markets of the Atlantic cities.

Should the sectional differences that have and still continue to divide the legislators of the country ever give way, and the location and completion of a great Pacific rail-road be established across the continent, it would open to the herdsman almost limitless acres, that can in no other way be so well employed as for pastures. For the protection and accommodation of the road, numerous settlers will be required along its line, who can be employed in no way to so good advantage to themselves and to the country as in rearing stock. Up to the period of the war of the United States with Mexico, cattle were reared in immense numbers in California, merely for their hides and tallow. With the inducements now held out by the demands for beef, and the facilities for transportation, the hide and tallow afford but a small proportion of the value of the animals that may be produced upon the great prairies, that now yield pasturage for the immense herds of wild buffalo, that with the Indians must soon give place to the improvements and expansion of the greatest nation of the earth.

Wheat may be regarded among all civilized nations as the first necessity of man. So high has this been estimated among man's wants, that some political economists have been disposed to regard it as the regulator of the ultimate standard of values; and we know of no commodity that may more appropriately be regarded as such. At any rate it is an article of such prime necessity that its production must ever be regarded as essential to the proper sustenance of man; and lands that produce it in tolerable profusion will always attain a high value. It is known that the wheat bearing properties of the soil are sooner exhausted than when cultivated in any other leading crop, and these properties require constant renewal by the

chemical action of properly applied agents; and we regret that this fact has not made the positive impression upon the minds of farmers in general, that it is destined to do after too great sacrifices have been made. The rich loams and calcareous clays, that form so large a proportion of the soil of the great Mississippi valley, abound in the agents by which the grain-growing properties of the soil may be indefinitely sustained, if the farmer will only learn how to use them to the best advantage. It requires that man should possess scientific knowledge to know how to avail himself of the means of reproduction that nature has placed at his disposal.

Taking the progress of the events to which we have referred, in relation to the settlement of this western country, as a faint criterion for the future, it is evident that the time is not far distant when all the region of country, from the western slope of the Allegheny mountains, to the termination of the limestone formation on the great plains west of the Mississippi river, will be devoted to growing vegetable food and clothing for man's use.

In a compendium from the last census report, there are calculations predicated on various ratios of the growth of the population of the United States. Taking the ratio of increase of population between 1840 and 1850, and applying it to decimal periods, the population of the United States, in the year 1900, it is estimated, will be 76,471,462 souls. There will then be over forty millions of people in the valley of the Mississippi. And we doubt not that from calculations predicated upon the next census returns, that will soon be made, that these estimates will be found far within the number previously calculated.

This vast population, with the increase of manufactures, mining, &c., that will then be in operation, will require the appropriation of all the grain-producing land for its own use.—Long before the period we have named, will the vast territory, lying between Kansas and the Rocky mountains, including Texas, New Mexico, and all the Indian Territory, south of the Missouri river, and even upon the western slope of the Rocky Mountains, be required to grow the cattle, horses and sheep that will be needed for this vast population.

In proof of what we here state, take, for example the central counties of Kentucky, that are now devoted to stock raising, and exclusive of the high priced animals sold for breeding, the returns will scarcely equal three per cent. on the value of the land and labor employed, which if divided into smaller farms and devoted more exclusively to grain and hemp a return more than three times greater would be realized. But these farmers are abundantly able to hold these large tracts of land, and a pursuit long established and so congenial will be followed for some time to come, even though its returns fall far short of other departments of farming.

According to the report of the Secretary of the Treasury, the annual consumption of wool in this country is more than two hundred millions of pounds, of which we furnish considerably less than one-half, while at the same time we possess a boundless territory better adapted to wool growing than that of any other country from which we receive our supplies. In the year 1900 we shall require scarcely less than 1,000,000,000 of pounds of wool. The adaptation of the climate and soil of New Mexico to the business of sheep growing has been established beyond controversy by the test of long continued successful experience. The strong soil, the dryness of the climate, the mildness of the temperature, and the rich and fattening qualities of the short, nutritious grass, that is indigenous to the soil, eminently adapt it to the purposes that Providence evidently designed it to fulfill—that of pasture grounds.

Now that a vast population has gathered upon the Pacific shores, from causes never dreamed of fifteen years ago, and that there is now an almost constant, daily overland intercourse between the Eastern and Western slopes of the country—What is to be done with the poor Indian, who, under numerous treaties, purchases, and removals had been assured of a permanent undisturbed home beyond the Mississippi? He must be either protected and civilized—or exterminated out right, and that at no distant day. Unless the Government interposes at once and extends the hand of humanity to them, forty years hence the last remnant of these once numerous tribes—the legitimate proprietors of the land they occupied—will be swept forever from the face of the earth. Shall we not then make an effort to protect and save them from immediate and utter extinction? Let us give them flocks of sheep and herds of cattle, and send men possessed of humanity and kindness among them to teach them the practice of rearing and tending these animals. The experience of Captain Sutter and others in California, is proof that this may be done, and at the same time lay the foundation of the future immense wealth in the husbandry of herds and flocks which in time

must ultimately develope in those vast unoccupied regions.

Of the natural tendency in favor of this state of things, we have now only to refer to some facts brought to light by the annual report of the cattle market of one of the great Eastern cities—New York. During the year just closed the value of the meat consumed in that city was $12,000,000, exclusive of a considerable amount that must have been brought in and sold and not embraced in the account at the regular trading places.

Of beef cattle, there were 191,375 head, exclusive of 10,128 milk cows. Including beef cattle, calves, sheep and swine, the number sold in this market during the year 1858 amounted to 1,238,101 head.

Of the whole number 191,375 head of beef cattle sold as above in New York, Ohio furnished 37, 599, Indiana 11,130, Illinois 52,818, Kentucky 9,409, Iowa, 2,794, besides others from Texas and other Western States. As time passes and the lands of these States become more valuable for grain growing, the number of beef cattle furnished for market, from these States, will not maintain a corresponding relation with the increase in the number of farmers, nor with the number of acres brought under cultivation, but the deficiency will be made up from the more remote Western States and Territories where land is cheaper and where the natural pastures are still unbroken by a crowded population.

We throw out these hints with the view to direct the attention of enterprising emigrants to the subject, where, with a small capital invested in stock, they may increase their means and influence for good to an unlimited extent—good to themselves, good to the numerous necessary stations along the various routes to be established across these great plains—good to the country at large—and good to the poor Indians whose hunting grounds they once occupied under a title extended to them by the hand of the "Great Spirit," whom they worship, but whose game is destined to flee rapidly before the march of civilization and the enterprise of a superior race.

SHEEP vs. HOGS.

The question has been asked, Which is the most profitable to the farmer, Sheep or Hogs? This, like the question we attempted to answer in a late number of the *Valley Farmer*, "How much Pork will a bushel of Corn make?" depends upon contingent circumstances. First, the breeds of both are to be considered. Second, the advantages of convenient market, and the advantages and facilities of the farm for the accommodation of the different classes of animals. To render sheep-growing profitable a breed must be kept that will yield a good fleece and at the same time be most valuable for mutton. The French Merinos give a fleece of the greatest value to the manufacturer while their mutton is inferior; the fleece of the Merino, though superior in quality will bring but little if any more in our American markets than the wool from the South Down whose mutton will bring the highest market price.

As we intimated in a former article, if farmers generally knew how little they received in return for the corn they feed to their hogs they would secure and maintain the best breeds, and adopt a more economical method of feeding.—To make hog growing profitable, those breeds should be kept that will give the greatest increase for the quantity of food consumed, and will reach maturity in the shortest period. In these respects there is a vast difference in the hogs that we meet with over the country.

On this question the Hon. John Wentworth, who has turned farmer in Summit county, Ill., makes some practical common sense remarks in the *Prairie Farmer*. After comparing various breeds of sheep and hogs, he concludes that there is a very material preference in favor of the South Down sheep and the Suffolk hog. He says: "The South Down sheep and Suffolk hogs are very quiet. They lose nothing from roving.—What they eat is absorbed in their system to a greater extent than that eaten by any other animals of their kind. Hence they make far less offal. For five months in the year my Suffolks and South Downs run together and have nothing but grass, and both keep fat. The fleece of the South Down sheep is generally one-fourth larger than that of the common sheep, and the chance of their extra lambs will pay for their keeping. I estimate the expense of fattening out of the grass season as only one-half that of the common sheep, which I estimated at one-half of the mutton. This, however, would not be one-quarter in the case of the South Downs, as their mutton commands a higher price than that of the common sheep. I will call it one-fifth. Thus you have in the case of the South Downs one lamb annually and four-fifths of the original carcass as mutton in the end for net profit. Last year I got two dollars quick for South Down lambs, and one dollar and fifty cents for half-bloods—when I sold my French

Merinos for seventy-five cents to one dollar."

Mr. Wentworth represents the Suffolk hogs, quiet and domestic in their nature, they waste no fat in running around but appropriate all the food they eat to the best advantage. The objection formerly raised against the Suffolk breed of hogs, that they were deficient in hair, for our cold climate, has been in a great degree remedied by the introduction of those better covered, and in crossing with similar hogs with more hair in our own country. The Suffolk is a pet hog and the tendency of the owner is to spoil them for breeding purposes, by allowing them to become too fat before they approach maturity. We have imported several Suffolks for different farmers, and in a number of instances they were ruined by being fed too highly on the way, and became so fat as to be worthless for breeding. The Suffolk requires no feeding in summer while young; if grass is abundant; and when fed, food that is bulky and least nutritious, such, for instance, as bran, vegetables, slop, &c., should be given them until their bones acquire sufficient size and strength to sustain their weight. Cared for in this way they will breed well and attain to large size. But in cold weather, shelter, with a bed of leaves, is indispensable for the Suffolk, though no breed should be neglected in this respect.

When a breed of hogs of larger bone and greater weight is desired, none we think is superior to the Chester White.

Every farmer keeps hogs, while comparatively few keep sheep, not so many as should keep them. Mutton is undoubtedly more healthy than pork, and good mutton always commands a ready sale in market.

[For the Valley Farmer.]

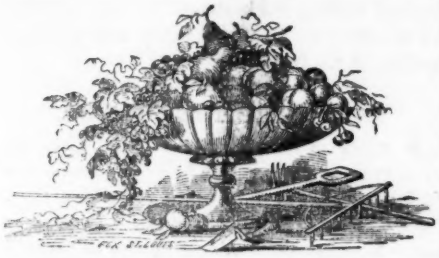
PLUMP vs. LEAN HOGS.

I desire through the columns of your valuable medium to call out an expression of opinion from others, as also give others my own views, in relation to the deep injustice dealt out to the farmer just hereabout, in the present system of arriving at the weight of hogs, when slaughtered by our pork packers. I assume, first, that this is the only county in Missouri, and that this is the only State in the Union, in which "grading" hogs, as it is termed, is practised. I do not deny that 200 lbs. is the admitted or at least adopted standard, necessary to yield the most profit to the packer. And even adopted as it may be, there arises much doubt as to it being just the precise, or dividing point, in the weight of the hog, at which the value of the meat is intrinsically more or less, as it may run over or under the aforesaid 200 lbs. A single illustration may suffice upon this point to determine. A year or so since there were driven into the yard of a slaughter house in one of the towns of our county two lots of hogs, the one a well fatted, compact, yet small framed lot, whose weight ran under the standard a few pounds, not exceeding five, per separate head. The other a large framed, large headed, low legged, flabby fleshed lot, just the age and in just the condition to begin on to make a fine lot of hogs, much over the aforesaid standard, yet just now over it two, three or five pounds. The latter brought $3.50 per 100 lbs., the first $3.25 per 100 lbs. It is hardly necessary for me to give an opinion as to the relative value of these two lots of hogs to the farmer, much less to dictate to the packer, and yet after a very animated discussion at the time, the only *good* reason given by the buyer for this difference in price, and deep injustice done the man exhibiting a becoming pride as a feeder, was the application of the aforesaid standard. Truly a knock down argument and most satisfactory. Now to the point. There are few, perhaps, who take notice that this difference in price, of 25 cents per 100 lbs., knocks off just 50 cents per head on each hog; and notwithstanding the one may be in good round condition, yet falling under the 200 pound system even one pound, the old sow, old stag, overruns it and obtains the highest price. This to me is all wrong; and while we, as feeders, agree that fifteen to eighteen months is as long as a hog can be retained profitably and must go at one or the other period to market, however good his condition may be when on the hook, comparatively, the scale above claims the right of determining the price. Did this rule work both ways, i. e., over the 200 pound system as well as under it, then the feeder would have at least an equal showing in the absence of a more favorable contract as to the dividing point.—For instance, if packers persist in the aforesaid rule of 200 lbs. being the very last lb. in the descending scale admitted, and for every 25 lbs. less a lower price still, why not make it work so as to reward the first, second, third or fourth 25 lbs. over the 200 lbs. But no, this is not so, and more than that, cannot be, *because custom* has fixed the aforesaid rule. I deny that custom has had anything to do with it, but admit, as one, that we all, as feeders of the hog, have most unreasonably submitted to a deep injustice not practiced elsewhere.

The remedy is within ourselves, and while we may maintain our friendly feelings towards the packers and buyers of our hogs and not dictate unto him a deviation from so long a practiced wrong, we can firmly bind ourselves by written contract that we shall and will sell our hogs only by average weight, allowing the buyer to reject at once, all that he may deem too light to slaughter. This gives us at once the net weight at an even price and can readily be understood and figured up by all; while under the old system of "grading" it takes a good scholar to find out his own just amount due, though not deep enough read to comprehend its application.

MARION COUNTY.

March 11th, 1859.



Horticultural Department.

SEEDLING vs. BUDDED PEACH TREES.

A very general impression prevails among the country people that seedling peaches are more hardy than those propagated by budding. This is true, though it is not true in the sense in which it is generally received.

All varieties of the peach now propagated by budding or grafting were once seedlings, but the fruit of these is no more liable to be killed by frost, than the fruit on the original seedlings from which the present stock of budded trees have descended. The process of budding in no way changes the character of the variety budded, either for hardiness or otherwise.

It is said that the peach in its present state, was improved from the bitter almond. This improvement is the result of cultivation, crossing and hybridization. That delicious portion we call the fruit—the pulp—is merely the envelope or covering nature has provided for the protection of the seed: the original design of it was the perpetuation of the species—and hence the vital force is directed to this end, and the seed is consequently fully developed, and the product is hardy; and those varieties that are *least* removed from the original type are the most hardy. But, as we have said, the improvement in the peach, as in all other fruits, is the result of art—just so far then as the fruit is improved and removed from the state of nature, just in that proportion is it at the expense of the hardiness of the variety.

This fact too, holds good throughout all the departments of animated nature, as well as in the vegetable kingdom. Compare the native Indian with the present cultivated races of mankind, also, our races of domestic animals with those in the state of nature—how different is their character for hardiness! But there is one characteristic of the peach that must be taken into consideration in this connection, and that is, the power of the different varieties of the peach to withstand the effects of cold according to the character of the blossom. Some varieties, and this is generally true with many of the seedlings we find in the country, have large blossoms, the petals of which afford a thicker covering to the embryo fruit, and hence this class is the most hardy, generally; while those kinds with smaller blossoms are more tender, and others are still more so where the petals stand out, or in other words the blossom is the least cupped.

It is only the improved kinds that are found most desirable to perpetuate by budding; these have become tender because they are improved and farther removed from the state of nature, but none are more tender, because they have been propagated by the artificial process of budding.

In our extremely variable climate, we, by no means condemn the propagation of seedling peaches. It should be practiced to a greater extent than it is, but with more care and calculation. The yellow-fleshed peaches can be depended on, with more certainty to produce their kind, than the white-fleshed peaches generally. In selecting seed, then, to plant, they should be from the best of those kinds that have large blossoms, as well as others most hardy with smaller cupped blossoms. In some instances the seedlings may be superior to the parent; in more, they may be of equal quality, while a large proportion may be inferior. But as the inferior peaches are most hardy, these may afford us a crop, while the others or budded varieties entirely fail—so that where land is cheap in favorable situations, and the peach is cultivated extensively, we would advise that a portion of seedling peach trees be planted, but care should be taken in the selection of the seed from none but the most improved varieties.

TRAINING THE GOOSEBERRY.

For productiveness, none of the kinds of small fruits equal the American seedling Gooseberries, provided they are properly treated.—When we say American Gooseberries, we refer to the Houghton, and kindred varieties, such as the *Mountain* Seedling, introduced by the "Shakers," of New Lebanon, N. Y., which in size surpasses the Houghton, and withal is equally productive, while the quality of the fruit is better. A seedling from the Houghton has also been raised by Mr. Charles Downing, superior in every particular to its parent. These Amer-

icans are not subject to that disease, the mildew, which renders all of the famous English sorts worthless in most parts of the United States.

As these American varieties are rampant growers, in our Western soil, their fruitfulness is greatly impaired by an undue growth of wood. In order to insure a full crop of large berries, the bushes require attention in pruning, not only in winter or spring, but in summer. At the winter pruning, all the surplus branches should be removed, leaving an open clear bush. In the spring a profusion of shoots will start and will entirely cover up the young fruit and prevent its full development and render the gathering difficult. Early in May all these surplus branches should be cut off, leaving only such as are required for the bearing wood for the next year. It is better not to shorten these main or bearing branches, but train them up into tree form. Or the best and most beautiful way to train these plants is in *espalier* form, that is fan shape. To do this economically and beautifully, a little trellis of two slats in hight, running with the row of bushes should be made. Strips of wood one and a half or two inches wide, or good sized bale wire permanently secured and supported by posts may be used. To these strips or wires the shoots may spread out and be secured with soft twine. With a little skill, rows of these bushes thus trained along the walks and borders, may be rendered most beautiful, as well as affording ample returns of large, well ripened fruit for all the labor thus bestowed. Whether the bushes are trained in this form or not, the spring pruning should not be overlooked if a full crop of good fruit is expected. The pruning should be repeated through the summer, as occasion requires.

But to grow these bushes and the fruit in the greatest perfection, the training should begin with the planting of the cuttings in the nursery. Fall, or early spring is the time, always before the buds swell, which is sometimes in winter.—Let the cuttings be long, of well ripened wood, removing the small immature portion of the top; and then cut out, with a sharp knife, all the buds or eyes for two-thirds of the length from the lower end, so that no bud shall be within two or three inches of the ground. This will prevent the growth of suckers from below; and the bush may be kept clean of suckers and trained in the most perfect manner in tree form, or as *espaliers*. Care should be taken to remove all surplus shoots as fast as they appear, and in a short time the bushes will become established so as to require less care. The labor of growing and training the bushes in this manner will be doubly paid in the quantity and superior quality of the fruit.

THE APPLE TREE BORER.

A writer in the *Genesee Farmer* gives an opinion that the apple tree borer "*will never attack a perfectly healthy tree,*" remarking that, "there is a vast difference between a *thrifty* tree and a *healthy* one." A *healthy* tree he regards as one that has received nothing but *vegetable* manure (good soil), whereas, a *thrifty* tree may have received animal manure. He remarks that the borer would not molest a tree which had been grown wholly by the aid of vegetable manures. To illustrate his theory, he refers to one of his orchards, which was set out on unbroken pasture land, and received but one plowing and no manure. These trees were never attacked by borers, while in other orchards, which had been repeatedly plowed and fertilized with animal manure (that is, yard manure or the droppings of animals,) they commit their yearly depredations.

The facts here stated clearly illustrate what we have repeatedly published; and as the writer does not attempt to explain the cause, he is evidently laboring under a misapprehension.—The facts are simply these: Trees planted and manured with stimulating (animal) manure, are forced into a rapid, *immature* growth, leaving the stem and young branches filled with sap.—This sap is severely frozen during the cold days of winter, and when it becomes suddenly thawed, as it frequently will, on the sunny side, in the middle of the day, the sap becomes vitiated and diseased, producing similar results upon that side of the tree next the sun, to those which take place in a potatoe or other vegetable when frozen and suddenly thawed. This diseased condition is just what the borer seeks. The trees planted in ordinary good soil make a more slow *healthy*, matured growth, and are not liable to the same injury by frost, and hence not exposed to disease, and of course, uninviting to the insect.

Newly planted trees should be kept in a healthy, growing condition; and, by *timely cultivation*, their growth may be entirely under the control of the cultivator. The most critical period with a young orchard of apple trees in this respect is from *three* to *six* years from the time of planting. As an additional safeguard, we have frequently recommended training the trees with low heads—and to do this the work of training must begin while the trees are young.

Cut them back well, and force out a growth of branches near the ground, let the hight be governed by the habit of growth of the particular variety. The branches shade the body of the tree and prevent the fatal consequences of the sudden changes through the influence of cold and heat. Nor are these all the advantages resulting from low trained trees. They are much less liable to assume a leaning position through the influence of the prevailing winds. The fruit is more easily gathered and less liable to injury in falling from the trees. Low headed trees, it is true, require a little more care in cultivation to guard against bruising them, but this is but a small matter when the work is done with implements of proper construction.

THE WEATHER AND THE FRUIT CROP.

The safety of the fruit crop is a matter of general solicitude in this section of the West, throughout the winter and spring. Up to the 18th of March the fruit prospects were unusually promising, and owing to the extremely mild weather during February and up to the middle of March, we were quite inclined to hope that no killing frost would occur. The nights of the 18th and 19th of March threatened the total destruction of the crop, but by a combination of favorable circumstances, which seemed to occur just at the right time, little damage was sustained.

On the 5th and 6th of April another cold term occurred, exceeding in intensity that of the 18th and 19th of the previous month--the themometer ranging, in many places, from 5° to 8° below the freezing point, a degree of cold, in ordinary conditions of the atmosphere, sufficiently great to entirely kill the fruit. But from the peculiar favorable hygrometric state of the atmosphere during the periods of the greatest cold, in connection with the fact that the morning sun was obscured by clouds, the loss of fruit was much less than was anticipated.

We have reliable information from the most extensive fruit growing establishment in Kentucky, which states that perhaps one-half or more of the peaches are killed. Cherries, embracing many varieties, one-third killed. Plums one-half or more have been blighted. Pears, apples and small fruits but little injured.

Similar accounts reach us from the principal points in the West. In some more favored localities less injury has been sustained, while in others, and particularly farther south, the loss has been greater, and in some places the peaches and other tender fruit have been entirely killed. We have fifteen days more from the present date to carry us beyond the day of danger.

An Attempt to Modify the Temperature by Artificial Means, for the Protection of Fruit.

A distinguished Pomologist residing in Jefferson County, Ky., has published a statement of the effects of building small fires in his fruit garden during the cold nights of March and April. The statement shows that a very considerable modification of the temperature may be secured by building small fires among the trees, but no information is given in regard to the number of fires that were lighted within a given space.

In a practical point we are hardly willing to place much reliance upon any advantage that may be gained by this method. It is seldom that occasions occur at this season of the year when so great a degree of cold produces so little injury to the crop. The reasons for this peculiar exemption we have given elsewhere, and any means that could be employed, would produce the most marked results at such times.—Fires may be rendered available when the atmosphere is still and dry, the sky obscured by clouds, and the temperature *but just below the killing point;* but with a clear sky and when there is wind, we doubt whether any great protection can be secured by such means. But the experiment is an interesting one; and for the information of those curious in such matters, we give the result and observations below:—

For the sake of comparison I have selected the 19th of March, when the thermometer worked almost identically as it did last night, reaching a minimum at 12 o'clock or midnight. In both cases the depression of the mercury was arrested at 12 o'clock P. M., last night, by a breeze blowing the smoke to the North-west; using the thermometers of our Smithsonian station freely. I had four sets of observation going on at once, to wit: the temperature of open air in the low ground and also upon the hills; temperature in the branches of apricots experimented with, and a night self-registerer, showing how low the temperature among the same branches within the circles of fires was reduced during the night by neglect of those on watch.

By these observations it appears that in a circular area not exceeding ten acres the thermometer ranged from 24 to about 28 degrees, being lowest in a small valley and highest on the hill-part of the orchard adjoining the valley. If I should judge of the injury to the fruit crop in general by its fate in my own orchard, I should pronounce it very considerable upon low, flat, and wet sites and very slight upon large, healthy

trees, favorably located—that is, I find peaches, pears and plums killed to an extent that greatly hazards if it does not destroy the crop in low grounds, and the same varieties of the same fruit very slightly affected upon the hills. Apricots were so large I find them killed everywhere outside the circle of fires—within that circle entirely uninjured, although the self-register showed that between the renewing of the fires for a short period the temperature run down to 26. Apples are not in full bloom and seem but little affected. Cherries appear to be in the same condition.

I think it probable that reports about the fruit crop will be very contradictory, inasmuch as the degree of cold has hardly been the same at any two places. Indeed, one of my nearest neighbors asserts that he examined his orchard throughout yesterday in vain in search of a live peach, although a large portion of it is filled with seedlings, whilst I think a fair crop survives on my own grounds.

A Statement showing the Temperature at stated times on Saturday night, 19th March, and Tuesday night, 5th April, respectively, at two points of observation, viz: open air in the low grounds, and the branches of certain apricots within a circle of fires:

	Hour.....	Open Air...	Within circle of fires.	REMARKS.
19th	6 P.M	39		
	9 "	31		Fires started.
	12 "	27	32	
	3A M.	27	35	
20th	5 "	27	32	
	6 "	27	35	
5th	6 P.M.	33		
	9 "	29		Fires started.
	12 "	26	28	
6th	1A.M.	24.8	28	Fires low.
	2 "	25	33	
	3 "	25	32	
	4 "	25	30	Fires low.
	5 "	24	32	

RAISE FRUIT AND EAT IT.

This is a fruit country. Nearly all farmers may raise their own fruit. Strawberries, raspberries, currants and gooseberries grow or will grow almost everywhere. They can be canned and so preserved the whole year. Apples, pears, peaches, cherries, can be raised on most farms. There is no good reason why fruit should not be as plenty as corn or wheat.

This is a bilious country—that is, the people who live here are especially liable to bilious diseases. There is perhaps, no better preventive of bilious diseases, than the constant use of fruit as a part of the diet. It corrects the acids and juices of the stomach and assists digestion. It keeps the bowels properly active and prevents that sluggishness and torpidity, which promote bilious derangements. Fruit to do its best office in the diet, should be cooked and eaten as a part of the regular meal. Thus used, how delicious it is? How it adds to the pleasure of a meal to have it enriched with so delicate and agreeable an article of diet! And how chaste and elevating is the tendency of such a diet, compared with one of solid meat and bread. So it is. The best diet is really the pleasantest. Therefore let fruit grow on all our farms, and adorn and make pleasant all our tables.

CARE OF RECENTLY TRANSPLANTED TREES.

Have you purchased and paid a high price for favorite trees the past Spring or Fall? And do you feel anxious to see them grow into beauty and usefulness? If so heed our advice. If you had not carefully prepared the ground before planting, spade deeply for the distance of a number of feet around each tree, and then spread a thick mulching of partly decayed manure, tan-bark, saw dust, or litter of some sort, to prevent the ground from baking, by the hot sun, and to keep it moist so that the roots may permeate in every direction. If you will do this you will find that your trees will make a remarkable growth, and that you will be rewarded for your labor. This advice will apply to all kinds of trees, whether evergreen or deciduous. To shrubs and plants of any kind it is equally applicable.

MISSISSIPPI VALLEY HORTICULTURAL SOCIETY.

The meetings of this Society will be held hereafter, on the second and fourth Saturdays of each month, at 10 o'clock, A. M. At the next meeting (Saturday, April 30,) it is important that there should be a full attendance, and we hope every member will be present. The subject of holding an exhibition in June, will then be considered, and the amount to be offered for premiums will be determined. Already the most influential horticulturists of the county, have become members. The society is prospering and bids fair to become one of great usefulness. But still there is room for more members, active ones, who will use their influence in enlarging the sphere of its usefulness. A cordial invitation is extended to all interested in horticulture to become members.

The meetings are held at the office of the *Valley Farmer*, N. E. corner of Chesnut and 5th streets, St. Louis, Mo. Let there be a full attendance at the next meeting and let us have

an exhibition in June, which will do honor to the society and to the horticulturists of the great valley.

[Written for the Valley Farmer.]

AUTUMN FLOWERING BULBS.

Last Fall we gave a few hints about procuring and planting Spring flowering bulbs. Those who did so, will now be reaping a rich reward for their labor and outlay, in the enjoyment of masses of beautiful Spring flowers, of all the colors and hues of the rainbow, and the shades and tints of the painter's art thrown in, including nature's own pencilings.

We now propose to offer a few remarks on Autumn flowering bulbs, for there are numerous varieties of these, that are exceedingly beautiful, and serve admirably to help out the flower season.

The Tiger Flowers, *Tigridia Pavonia* and *Conchiflora* are much too seldom seen. For gay coloring and striking appearance, nothing can compete with them. Their open cup like blossoms, either of a rich orange crimson, as in the Peacock Tiger flower (*T. Pavonia*), or a chrome yellow, as in the Shell Tiger flower (*T. Conchiflora*), spotted in both species with rich purple and dark crimson in the bottom of the cups, have a brilliant and showy effect.

These flowers open in the morning, and fade before evening; but as each flower stem produces several flowers in succession, a bed three or four feet in diameter, containing a couple of dozen bulbs, will produce a constant show of blossoms every day from July to November, forming one of the most attractive features of the flower garden.

The Tiger flowers are bulbous plants growing from one to two feet high. The bulbs are tender and require to be taken up before frost reaches them, and stowed away in a dry place in any part of the house or cellar, where the frost does not reach. It will grow and bloom with little or no care, in any sunny part of the flower garden where the soil is good. But it is greatly increased in size and beauty, by an addition to the soil of equal parts of old manure and white sand. In such soil the bulbs grow strong, the leaves are abundant, and the flowers much finer and more abundant.

The *Tuberose* is a bulbous rooted plant more commonly known than the above, and succeeds well with the same treatment. It is one of the most deliciously scented of all bulbs. A bed formed partly of it and the Tiger flowers, has a beautiful appearance in the months of August and September—the pure white of the Tuberose being heightened by the gay coloring of the Tiger flowers. They may both be planted as soon as the ground gets dry and warm, or any time during the month of May.

The *Gladiolus* or Sword lily is an elegant autumnal flowering bulb, embracing several species and many varieties, a few only of which are common. Its flowers are tubular, borne on tall spikes, and are mostly of red, orange, white and allied colors, very beautiful and showy. The kinds best adapted for fall blooming, are varieties of *Florabundus*, *Gandavensis*, and *Psittacinus*, these are tall late growing sorts. They succeed well in a light rich soil composed of sandy loam and leaf mould, made dry by drainage if necessary.

All the above kinds of bulbs are propagated by offsets, which may be taken off in the Fall, when the plants are taken up, and stowed away in winter quarters, and planted out in Spring by themselves, until they have attained size and strength for blooming. Wherever the Dahlia is cultivated and kept through the Winter, these bulbs may be kept along with them, and in the same manner, only requiring to be kept dry, and free from frost, in a box of sand or sawdust, or some such dry material.

CAREW SANDERS.

[Written for the Valley Farmer.]

MONTHLY HINTS FOR THE GARDEN.

BY CAREW SANDERS.

MAY.

The Spring has been thus far, hereabouts, a very wet and cold one, and the soil up to this writing scarcely in a good workable condition for garden seeds.

There will much remain to be done in the garden this month, that would otherwise have been done last. No time should be lost now in trying to make up for the delay. It is, no doubt, a loss of time to work ground while wet, and a positive saving to wait a few days, a week, or even two, in order to have it in a good working state.

If any of the root crops were left unsown last month, they should be early attended to now, though beets and carrots will make a crop if sown much later than this.

Sweet corn, Summer squash and snap beans, may be planted at intervals of two or three weeks, if a constant supply of tender vegetables is desired.

Celery should be sown for main crops; choose enriched, friable soil, and mulch lightly with manure, and water occasionly in dry weather. Flat Dutch, Drumhead, Savoy, or other Winter cabbage should be sown at once, with a reserve of seed for a final sowing by the middle or end of the month.

As a preventive of the cabbage fly, often so destructive to the young plants in the seed beds, it is practiced and recommended by some, to collect a large pile of brush and rubbish, and burn over the spot where you intend to sow the seed. Spread the ashes over, fork the ground up lightly, and sow while the soil is yet warm.

As soon as crops appear above ground, the soil should be carefully stirred around them.

This is one of the advantages derived from drill culture, and a very important one it is during dry seasons. The deeper the ground is loosened, the better will it support vegetation. The loose ground on the surface acts as a mulching, and prevents the rapid evaporation

of the moisture from below. The air is also allowed access to the roots, facilitating those chemical changes upon which the plant so much depends.

Weeding must be diligently attended to, both by hand and hoe; for as weeds grow luxuriantly, it is necessary to eradicate them before they spread too far, as by neglect they will not only impede the growth, but eventually smother the plants.

THE FLOWER GARDEN.

HARDY BORDER PLANTS.

The modern practice of relying principally on the tender exotic, and half-hardy beauties of less rigorous climes, will do well for those who can afford to have green-houses and hot-houses, with a gardener to nurse and coax them into growth and bloom. But for the majority, the million, who love flowers as well as the rich, they must still depend mainly on the good, old-fashioned hardy herbaceous or border flowers: the Peonies, the sweet Williams, the Columbines, &c., of our grandfathers and great grandfathers.

Still by a judicious selection of these, together with a little assistance from the modern improver of hardy plants, with a few dozen "Bedding flowers," purchased annually of the florist, we can get along well enough.

Indeed we can keep our garden quite gay and attractive all the season, without the aid of the green-house or professional gardener.

Our object in this article, is to call attention to a few species of hardy flowers that stand pre-eminent for this purpose, by their long-continued or late blooming—for their great variety and exceeding beauty; also to a few new hardy flowers that are likely to step in and partly supply the place of the vaunted "bedding flowers," by being hardy and also constant bloomers.

During the spring and early summer months we have an abundance of hardy flowering plants, commencing with the early bulbs; thence through a long list of herbaceous perennials, which bloom almost with the first vegetation in Spring, until we arrive toward midsummer, when these flowers are fairly dropped off; and unless we supply their places by summer and fall blooming plants, a paucity of flowers is the consequence the balance of the year.

The family of Phloxes is eminently an American one, many of them being natives of our soil, and all succeeding admirably in it, and is one of the very best varieties of flowers for our purpose. It is fairly brought up to the rank of a "florist's flower," and very many varieties are named and described in the catalogues, varying in color almost as much as the verbena, and like that flower is of itself capable of creating quite a display in the flower garden.

A selection of these delightful flowers should be had by all means. Of the easiest culture, perfectly hardy, almost everblooming and of pleasing qualities throughout, it deserves a place in every garden, and is indispensable to fill up the blank of hardy flowers in July, August and September. They may yet be planted.

The *Delphinium* is a noble and striking family; tall, with large spikes of mostly different shades of beautiful blue flowers, blooming only once in the season, but that along in summer, and they are eminently desirable. But a new kind—*Delphinium Formosum*—is pre-eminently so, affording as it does a regular succession of large, splendid, blue flowers all through the season. It has already been pronounced the most desirable acquisition of late years, perfectly hardy, and requiring no more care in culture than a peony or daisy.

The herbaceous *Spireas* are an elegant class of plants, blooming about midsummer, of easy culture and hardy, with long, feathery spikes of white and pinkish flowers.

The *Lobelia* furnishes us with some varieties for our purpose. *L. Cardinalis* or Cardinal flower, is a superb scarlet, and *Syphillitica* a beautiful blue; both natives of our great West, and make a fine display in the Fall months.

The *Hollyhock* is a superb flower for late blooming, and deserves much more extensive culture than it receives. The improved named varieties are very large and double, of almost all shades of color. Their tall spikes form very showy objects in the flower garden.

If the named sorts cannot be procured, seeds from choice varieties should, as being more likely to afford fine-sized, colored and double flowers.

There are other hardy, late blooming flowers worthy of culture. The *Achillea* or Millfoil, *Antirhunum*, *Eupatorium*, and *Digitalis* or Foxglove are among them. Add to the above list the gorgeous *Dahlia* and glorious *Chrysanthemum*, and the most fastidious cannot complain of lack of material for garden decoration, during the latter part of summer. All the above are of easy culture, only requiring to be planted in common garden soil, kept free of weeds, and staked and tied up as required.

HARDY FRUIT.

"Pears, grafted on quince, require deep, rich soil, to derive full benefit from this method of culture. Many failures have occurred and much disappointment has been occasioned by those who have planted these without knowing what they were about. Of course all such failures are attributed to the trees and the system of grafting them. Few people care about taking blame to themselves, if they can by any means shift the responsibility. Pear culture on this system is not for those who plant a tree as they would a gate-post, and who look upon the after treatment of both in the same light—that is, leave them till they rot and then put in a fresh one."

"The amount of pruning that trees require at planting, depends upon the degree of mutilation and maltreatment the roots have been subject to. The older the tree the greater the mutilation the roots are likely to suffer, and consequently the more branch pruning will be necessary. For this reason young trees are better for general planting than older ones. Two years from the bud is a favorite age for the removal of nursery trees. At this age, too, they are put in condition for training to any desired form. Young trees that have been neglected during last summer, with reference to pruning,

and have shoots three or more feet in length, should have those luxuriant shoots bent down and fixed in that position. Close pruning such shoots only increases their vigor."

"Care in disbudding where branches are not wanted, and pinching early the extreme points of those shoots that seem to grow too strong, should early attract the attention of those who wish to see a perfect and well furnished tree."

This subject of heading back newly planted trees is altogether ignored by some cultivators, and often fails to be practiced by many farmers and others. Our opinion is, that they should always be headed back, as near in proportion to the amount of roots lost in taking up as possible. If it were possible to dig up trees without the loss of any, or but a small portion of their fibrous roots, this practice might be unnecessary. But often some of the larger roots are cut or broken off in digging and left behind; besides hundreds of delicate fibers (the real feeders), slender as a thread and brittle as glass, are almost universally lost, torn, broken or cut off, almost without being seen or felt by the operator, and this, just in proportion to the size of the tree, the skill and care employed in taking up, &c., though some difference is owing to the different kinds and varieties of trees and plants operated on, nature of soil, circumstances of removal, &c., &c. But assuming that a healthy tree in its natural or normal condition, preserves an equilibrium between the top and roots, and that each is prepared to start and carry on its respective functions, reciprocally and equally, from the beginning to the end of the season—how can it be possible or be expected that trees taken up from the nursery, or from the forest or anywhere, can possess that equilibrium necessary to start anew with vigor, with prospects of speedy recovery and healthy growth. Either one of two things will be the consequence in many cases. The buds will all or nearly all start as usual, and commence pumping away on the roots; the new growth of which being inadequate to supply the demand, the tree languishes and dies, and planters wonder how it came to die after it had leaved out so finely.

On the other hand, the tops being all left on, a portion only of the buds start, and these perhaps near the top of the branches. The tree survives, but a foundation is laid for a scraggy growth and an ill-shaped, ill-balanced head, which cannot be brought into form again by any after treatment, unless it is by heading back closely, which ought to have been done at first. We conclude then it is necessary both for the safety and welfare of the tree and the proper commencement of the formation of the head, to head back all fruit trees, more or less, as judgment dictates, guided by the above reasons.—Of course we do not say that all trees should be pruned alike. No rule can be given or laid down—but experience, reason and common sense must be the guide. With some ornamental trees, merely thinning out the branches and shortening slightly may be sufficient; and that some small trees and plants may be taken up without the loss of a fiber, we admit, and may be planted entire with perfect safety. But that does not affect the general principle as applied to nursery and forest trees, as they are generally required for transplantation.

We are led to these remarks by having observed in this vicinity this season, orchards planted out, without a knife having been applied to the branches at all, and where one or the other of the above results will be likely to follow. So where pruning has been neglected at the time of planting, no time should now be lost in heading back the tree as above recommended.

[Written for the Valley Farmer.]

FLOWERS.

How seldom it is that we find an industrious pushing farmer that has much taste for flowers. Why this is, we can scarcely tell. Few objects in nature perhaps, present to the mind any stronger evidence of the goodness of our Creator, than the fact that He has strewed our path with flowers. Nature might have brought to perfection the germinating process without that beauty of coloring and foliage which always attends it. Yet the Author of all good has chosen to beautify the meadow, the garden, the field and the forest, with this token of His love. It is an imprint, left by the Divine mind to encourage us to cultivate a love of the beautiful, in *our* works as He has done in *His*. Though I would by no means take from the fair daughters of our land, that work which naturally falls to them, viz: the superintendance of the flower garden, I think we might find in many instances that a more active part in this regard, would produce in many cases a refining and softening influence on the other sex, now almost unknown. ****

WHITEWASH FOR BUILDINGS.

In Downing's *Country House*, the following directions are given which may be acceptable to our readers:

Take a clean barrel that will hold water. Put into it half a barrel of quicklime, and slack it by pouring over it boiling water sufficient to cover it four or five inches deep, and stirring it until slacked. When quite slacked, dissolve it in water and add two pounds of sulphate of zinc, and one of common salt, which may be had at any of the druggists, and which in a few days will cause the whitewash to harden on the wood-work. Add sufficient water to bring it to the consistency of thick whitewash.

To make the above wash of a pleasant cream color, add three pounds of yellow ochre.

For fawn color add four pounds of umber; one pound of Indian red, and one pound of lampblack.

For gray or stone color, add four pounds of raw umber and two pounds of lampblack.

The color may be put on with a common whitewash brush, and will be found much more durable than common whitewash.

The Poultry Yard.

THE EGG TRADE.

The trade in eggs in Cincinnati and some other western cities is becoming a business of considerable magnitude, and might be extended to many other towns and cities to great advantage to both the shippers and the producers. Eggs can now be sent from one end of the country to the other as well as fruits, flour and other articles for the consumption of the large cities and seaports. To judge of the quality of eggs, and to pack them properly so as to bear handling and safe carriage, requires some little experience and skill, otherwise the loss sustained from bad management will sometimes draw largely upon the profits of the operation.

By the simple test of the candle, that is, clasping the egg in the hand and looking through it lengthwise, after a little experience, there is no difficulty in determining their soundness.—Recently a little instrument has been invented for the purpose in which six eggs can be examined and their quality determined at once.

The first important requisite in shipping eggs is to secure substantial packages or barrels.—These should be stiff and strong so as not to yield in the rough handling to which they are exposed by the reckless laborers employed on the various transportation routes. On the bottom of the barrel a layer of soft straw should be spread; over this lay a stiff paper; then two or three inches in depth of oats; then a layer of eggs closely packed and embedded in the oats on their sides, their ends outwards to the sides of the barrel, leaving a space of at least one inch from the staves. Then place above these a layer of oats and then gently shake them down. Continue to place the eggs in alternate layers with the oats, gently shaking the barrel as each layer is placed, until the barrel is full, covering the last layer with paper and then with straw to the depth as before stated for the bottom. The eggs must be so firmly packed in the oats and covered with the paper and straw as to require a considerable pressure with a convenient lever to put in the head; for if the packing is not close and the pressure sufficient to confine the entire contents so as to prevent the least change of place, the eggs will be liable to breakage; but if firmly packed, according to instructions, they may be shipped any distance in safety. The oats will always sell at a profit in the markets where eggs are in demand.

If our country friends would furnish warmer roosts for their fowls, feed with more care and regularity, furnish some refuse animal food occasionally, such as offal and waste meat during winter, and provide boxes with dry ashes in the hen houses for the fowls to wallow and bathe in, a large increase in the production of eggs might thereby be secured. Hens will lay as well in Winter as in Spring if they are only provided with warm roosts, with plenty to eat, including animal food, when insects cannot be had.

Receipts for Housewives.

BIRD'S NESTS.—Pare six or eight large apples, Spitzbergen or Greenings are best for this purpose, and remove the core by cutting from the end down into the middle, so as to leave the apple whole except where the core has been removed. Place them as near together as they can stand, with the open part upward, in a deep earthen pie dish. Next make a thin batter, using 1 quart sweet milk, 3 eggs, with sufficient flour, and pour it into the dish around the apples, also filling the cavities in them; bake in a quick oven. Eat them with butter and sugar, but let not the delicious taste make you forget the bounds of prudence.

A HINT TO HOUSEKEEPERS.—A few drops of carbonate of ammonia, in a small quantity of rain water, will prove a safe and easy anti-acid, &c., and will change, if carefully applied, discolored spots upon carpets, and indeed all spots, whether produced by acids or alkalies. If one has the misfortune to have a carpet injured by whitewash, this will immediately restore it.

HYPOCRITE CAKE.—Take one cup of sour cream, two eggs, a piece of butter the size of a butternut, a half teaspoonful of saleratus, wet hard, cut in squares, rolled thin, fry in hot lard to a nice brown, put in a deep dish, pour over a gravy made of a cup of sugar, one of butter, two of hot water, with a half a nutmeg grated over it.

Send it to the table hot, in a covered dish.

This recommends itself in the place of puddings for dinner and will be found very palatable.

TO MAKE SOFT TEA CAKES.—One quart of flour, one pint of molasses, half a pound of butter, four eggs well beaten, a teaspoonful of ginger, one teaspoonful of cinnamon, one teaspoonful of soda dissolved in a little water; mix together the molasses and butter, then add the eggs.

We give the following recipe for soap, thinking it may be of great use in this dirty country, to some poor housekeeper.

HARD SOAP.—A patent has been granted in England for an improvement in the manufacture of soap, by the addition of sulphate of lime to the usual ingredients employed in its manufacture. The sulphate may be added with any of usual ingredients employed in the manufacture of soap. The proportions of the sulphate which it is best to employ, vary according to the article manipulated upon, and the quality of the soap to be produced.

Thus, about twelve ounces of dry sulphate is sufficient for one ton of best soap, whereas, in common or highly liquored soap, six or eight pounds may be used with advantage. Soap made with the addition of sulphate of lime becomes hardened, keeps dry, and is not liable to shrink while in water and its durability is increased.

The Home Circle.

"SANDWICHES FOR EVENING PARTIES."

Chop fine some cold dressed ham, say about a quarter of a pound; put it in a basin with a tablespoonful of chopped pickles, and a teaspoonful of mustard, a little pepper or Cayenne. Put about six ounces of butter in a basin, and with a spoon stir quickly till it forms a kind of cream; and add the ham and seasoning—mix all well; have the sandwich bread cut in thin slices; have already cut, thinly intermixed with fat, either cold roast beef, veal, lamb, mutton, poultry, fowl, pheasant, grouse, partridge, etc., either of which lay evenly, and not too thick on your bread; season with a little salt and pepper; cover over with another piece of bread. When your sandwich is ready, cut them in any shape you like, but rather small and tastily, and serve. You may keep them in a cold place, if not wanted, as they will keep good under cover for twelve hours.

Such is what the *Ladies' Book* calls delicate food for genteel ladies to eat before going to bed. The principle ingredients are pork, fat, butter, pickles, mustard, pepper, salt, not one article of which, in our judgment, is fit for human food. To say the least of pork it is most objectionable of all meats, and was prohibited among the Jews, by their law, because it was not proper for food. Fat is always to be prohibited, as it was also by the Jewish law. It is indigestible, unwholesome and every way improper for an article of diet. Butter should only be eaten when it is perfectly pure, and then only in small quantities, as a thing which is to be suffered for appetite's sake, but of no real value as an article of food. Everybody would be better off without it. It lays a heavy tax on the stomach. Pickles are unfit for food, absolutely unfit for food; should never be eaten under any circumstances, because so hard to digest, so merciless on the stomach. Mustard, which will draw a blister on the outward surface in a few minutes, is a fire in the stomach, almost as objectionable as live coals. Pepper is liable to a similar objection; and salt should only be used in small quantities, if at all. A mixture of these unpalatable, indigestible, sharp, strong, fiery substances, is recommended for an evening food! Almost as well go into an apothecary's shop, and mix as many ingredients at random from his shelves, and call it food. If our stomachs were made of india-rubber or gutta-percha, they would possibly bear such usage. But as they are of a delicate fibrous structure, and adapted only to the use of such articles as are easily digested, and valuable for food, they cannot be expected to bear such mixtures and remain long in a state of health. Thousands are fast wearing out their lives in the use of such articles for food. *

[Written for the Valley Farmer.]

THE EVENING IS DREAR.

The flowers are all gone from the prairie,
The forests are brown and bare,
The sky is leaden and wintery,
There's a shivery chill in the air.

The farmer comes home from the woodland,
With axe on his shoulder laid;
The cattle look glad at his coming,
The day is beginning to fade.

There's a firelight within, warm and glowing,
There's a table well spread with good cheer,
Bright faces to welcome his coming—
Who said that the evening was drear?

A cabin, just out on the prairie,
Went up, when the summer was here;
Stout hands labored earnestly on it,
And children looked on, with their cheer:

But now, in that lone little cabin,
The storm-winds bring sorrow and fear;
The Father lies low in his weakness—
God help them! THE EVENING IS DREAR!

Kansas, Jan. 15th 1859. CLARA MOORE.

[Written for the Valley Farmer.]

THE MAIDEN'S CHOICE.

BY MRS. F. D. GAGE.

Oh! give me the life of a farmer's wife,
In the fields and woods so bright,
'Mong the singing birds and lowing herds
And the clover blossoms white:
The note of the morning sky lark
Is the music sweet for me;
And the dewy flowers, in their morning hours
The gems I love to see.

Oh! ask me not, to your city lot,
Or your pave, where Fashion throngs
Thro' the live long day, in vain display,
As the idlers pass along;
Where the sickly hum of pianos
By nerveless fingers played,
Tell the morbid life of maid or wife
In the blighting city shade.

Oh! give me the breeze from the waving trees
And murmer of summer leaves,
And the swallow's song as he skims along,
Or twitters beneath the eaves;
The plowman's shout as he's turning out
His team at the set of sun,
Or his merry good night, by the fire-fly's light,
When his daily work is done.

And give me the root, and the luscious fruit
My own hands reared for food;
And the bread so light, and honey white,
And the milk so sweet and good:
For sweet is the bread of labor
When the heart is strong and true,
And a blessing will come on the heart and home
If our best we bravely do.

The Young Folks' Page.

ASTRONOMY.---No. 4.

(Since we published our last article under this head several of our young friends have inquired of us whether we intended to discontinue our numbers on Astronomy, and request their continuance. If they are regarded as matters of interest and instruction to our young readers we shall be most happy to devote a page occasionally to the subject.)

Having given a somewhat hurried view of the Universe as a whole, we will now proceed to consider its members individually, beginning with the sun, as being the grand central body of our system, and by whose gravitating influence all the bodies of the system are held in one bond of companionship, each performing its annual revolution around this centre, as prescribed by its wonderful and mysterious power.

The magnitude of the sun is inconceivable, being nearly *one million* of miles in diameter—so large that were the earth placed at its centre, and the moon revolving around it as it now does, its path or orbit would be thousands of miles smaller than the diameter of the sun.

From continued observation of the spots that often appear on the sun's surface, it is supposed to be a dark opaque body surrounded by a glowing atmosphere in constant violent agitation. From this atmosphere comes the light and heat that render the earth so glorious a dwelling place for the inanimate, as well as the animate existences upon its surface; for both its light and heat are of potent consequence in the economy of nature, as exhibited so wonderfully around us. It is by its light alone that we are made sensible of the existence of the other planets of our system, its rays falling upon their surfaces and reflected back to us; or, more probably, from the atmosphere that surrounds them, they are thus rendered luminous to our sight.

It was supposed by the elder Herschel and others that the sun might be a habitable world. Other distinguished astronomers think otherwise. But could not He who created this stupendous planet form beings suited to its condition?

By the aid of the telescope there may be seen upon the sun's surface at nearly all times dark spots, various in form and size, and changeable in position, sometimes moving with great velocity upon its disc, yet generally stationary.—They have a very dark nucleus, always surrounded by a grayish border, and seem to be openings in the brilliant atmosphere through which the real surface of the sun is seen, which would thus seem to be nearly black and devoid of light in itself. These spots are often many thousands of miles in diameter, and sometimes so large as to be seen without the telescope, the eye being protected from the direct rays by a piece of smoked or colored glass.

Like all the larger planets the sun revolves upon its axis, which is inclined to the plane of the ecliptic about 4 degrees. The period of its revolution is about twenty-five days.

A BOY OF PROMISE.

An exchange paper gives the following statement, which we take pleasure in circulating for our boys to read:

We have a carrier connected with this office, between the age of thirteen and fourteen, who occupies a seat in the highest class in our public school; has the geography of the country at his finger's ends, and who can cypher round a bevy of school masters, and who, in two-and-a-half years more, which will make him sixteen, will probably read Cicero and Homer to boot. But in addition to acquirements at school, he has three hundred dollars in the savings' bank, drawing five per cent. interest, and his daily addition thereto, all gathered together by selling newspapers between school hours.

That boy is made of the right material. He will make a man who will know how to take care of himself. He has courage, industry, patience, economy, calculation, foresight: in a word, all the requisites to make a man of the first order. He not only knows how to get money and take care of it and use it, but he is on the pursuit of knowledge. He is at his school every day. He is doubtless as industrious in his studies as in his business. With his studious and industrious habits he can scarcely fail to make his way in life and act well his part.

To this good example for boys we would add another that a few years ago came under our notice:

A young man in his teens, the son of a moderate farmer, made a practice of reading all his odd moments, snatching scraps of time morning, evening, noon, rainy days, &c. He always had a book on hand and read a page, a half page, a few lines or words at every moment to be spared from his work. He was equally industrious at his work and his reading. At twenty-one he was well-stored with useful information for one of his scant opportunities. But he was not satisfied. When he left his father's farm, he made his way to school to the nearest academy with less than ten dollars in his pocket. For seven years he pursued his studies with unabated zeal, working and teaching by turns to meet his expenses, at the end of which time he entered a profession, well booked and well clad, with two hundred and fifty dollars at interest. His success has been just such as industry, zeal, economy and love of letters are apt to give.

Almost every boy may be equally successful if he will be equally industrious and faithful in the pursuit of honorable aims.

Editor's Table.

The Premiums.

Our subscribers doubtless feel some interest in regard to the premiums offered by us to those forwarding the largest clubs of subscribers for 1859.

The first premium—Manny's Combined Reaper and Mower, valued at $150—is awarded to D. S. Fairchild, of Monroe Co., Ill., he having sent us 221 subscribers.

The Second premium—Singer's Sewing Machine, valued at $145—is awarded to T. G. Newbill, of Green Co., Mo., he having sent 211 subscribers.

The third premium—Coleman's Farm Mill, valued at $100—is awarded to Oliver Albertson, of Washington Co., Ind., he having sent 133 subscribers.

The fourth premium—Moore's Grain and Seed Drill, valued at $80—is awarded to Francis M. Gwin, of Floyd Co., Ind., he having sent 132 subscribers.

The fifth premium—Cummings Patent Combined Hay, Straw and Corn Stalk Cutter and Crusher, valued at $35—is awarded to Col. Jas. McCown, of Johnson Co., Mo., he having forwarded the names of 90 subscribers.

The sixth premium—Deere's Double or Michigan Sub-Soil Plow, valued at $30—is awarded to S. Whitsett, Johnson Co., Mo., he having sent 80 subscribers.

The seventh premium—Ten Dollars in Agricultural Books—is awarded to N. S. Dimmitt, Marion Co., Mo., he having sent 74 subscribers.

There are a large number of others who have sent in clubs varying from fifty to seventy subscribers, but they will doubtless cheerfully submit to the doctrine that "to the victors belong the spoils." It gives us pleasure to state that the successful competitors are all practical farmers, who have labored more for the purpose of disseminating a good agricultural paper than to obtain the premiums. To one and all who have aided in swelling the list of our subscribers to its present size we return our warmest thanks, and as you have labored earnestly for our interest so will we devote our best energies to making the *Valley Farmer* a journal which you can still confidently recommend to all those engaged in agricultural pursuits.

Notice to Subscribers and Correspondents.

We are constantly receiving letters addressed to the "Valley Farmer," in which the writers omit to give the names of their post offices, and more frequently the county and State are omitted. Without the name of a post office it is often impossible for us to turn to the name of a subscriber, and consequently their requests are not complied with, when the fault is entirely their own.

In addressing us, particularly in reference to subscriptions, always give the NAME OF THE COUNTY AND STATE, as well as the name of the post office.

And when a subscriber writes to have his paper changed in its direction from one post office to another, it is as important to know where it HAS BEEN sent as to know where it is to be directed. Without an observance of this we can not make the change. Will writers remember?

Crops, &c., in Tennessee.

One of our subscribers in Tennessee in sending a list of subscribers thus writes:

Our Spring has been rainy to great excess, so that farmers are very backward in plowing for corn. Now we have the appearance of more settled and growing weather. Wheat looks fine and of excellent color—corn scarce and high. A "cold snap" some ten days ago killed our peaches and I fear most other fruit. The thermometer sunk twelve degrees below the freezing point.

Greenville, Tenn., April 14th, 1859. E. L.

The Wheat Crop.

Accounts reach us from almost every quarter of the favorable appearance of the growing wheat. Although the past winter has been excessively wet, there has been but slight alternations from warm to cold and but little freezing and thawing, otherwise the crop must have been much winter killed. We have traveled over a considerable portion of the State of Kentucky and we have seldom seen the crop look better. In some places where water has stood long and on land generally wet the wheat has been materially injured, but there is comparatively but little land of this character in the better portions of the State. The late cold weather, while it has proved somewhat injurious to the fruit has proved of decided benefit to the wheat by checking its too luxuriant growth. With the superabundance of rain that has already fallen we may reasonably look for fair weather at the more advanced stage of the crop and hope for an abundant harvest.

St. Louis Agricultural and Mechanical Association---Magnificent Premiums.

This association will offer about $20,000 in premiums for their fourth annual fair to commence on the 26th day of September next. Among others of a very liberal character are the following magnificent premiums:

For the best Thorough Bred Bull,	$1000
" " " " " Stallion,	1000
" " " Roadster Stallion in Harness,	1000

Competition is invited from the whole Union, and this year no entry fee will be charged in any department.

Michigan Agricultural College.

R. F. Johnstone, Esq., editor of the "Michigan Farmer," having been called upon to make the annual report to the Board of Education of the Agricultural College, discharged that duty in so able and satisfactory a manner that it has induced the Board to tender to him the office of General Superintendant of the College Farm, which offer, we are pleased to learn, has been accepted by him, while he still retains the editorial charge of the "Farmer."

The "Michigan Farmer" is one among the best and most valued of our weekly exchanges; but with the advantage of the every day observation that will result from the general supervision of a model farm, we think the "Farmer" will become a most important and indispensable adjunct to the farmers of the peninsular State. We wish the College and the "Farmer" abundant success.

☞A list of the officers of the Clinton County Mo. Agricultural and Mechanical Association for the year 1859: A. H. F. PAYNE, President; GEO. W. CULVER, 1st Vice Ppresident; J. R. COFFMAN, 2nd Vice President; W. L. CULVER, Secretary; J. N. HOCKADAY, Treasurer.

Catalogues Received.

From SAYERS & HUTCHINSON, Cincinnati, Ohio, Supplimentary Catalogue of new and choice Verbenas, Petunias, Fuschias, Scarlet Geraniums, Heliotropes, &c. We can commend this establishment to all who wish articles in their line. They have the largest and best conducted greenhouses in the West, and the proprietors are gentlemen in the true sense of the word and will fill all orders honorably and promptly.

From LEWIS ELLSWORTH & Co., Descriptive Catalogue of Fruit and Ornamental Trees, Shrubs and Plants, cultivated and for sale at the Dupage County Nurseries, Naperville, Illinois. This is a valuable catalogue of 72 pages, recently issued for the years 1859 and '60. Messrs. Ellsworth & Co., have the largest nursery establishment, we believe, in the West, and their extensive business is connected with great system and accuracy. The senior partner, Lewis Ellsworth, Esq., was elected, the past winter, president of the Illinois State Agricultural Society, which is an evidence of the esteem that the citizens of that State entertain for him. Anything wanted in the Nursery line can be obtained from this establishment.

MERRIMAC (MO.) TOWNSHIP HORTICULTURAL SOCIETY.—The next meeting of this enterprising horticultural society will be held on the first Thursday of May at the residence of the president of the society, Dr. A. W. McPherson, near Allenton. We acknowledge the receipt of a polite invitation from the president to be present, and shall endeavor to meet the horticulturists of Merrimac township on the occasion. The June meeting we understand will be held at the residence of C. H. Haven, Esq., at Melrose.

☞ The MISSISSIPPI VALLEY HORTICULTURAL SOCIETY meets on the 2d and 4th Saturdays of each month for the exhibition of fruits and flowers and the discussion of Horticultural subjects, at the "Valley Farmer" office, St. Louis, Mo. All who are interested in the objects of the Society are respectfully invited to attend the meetings. Persons wishing to become members can address Norman J. Colman, Recording Secretary. Terms of membership only one dollar per annum.

VERBENAS.—Dexter Snow, the great Verbena man, at Chicopee, Mass., has sent us his catalogue containing the names and description of all the new and valuable varieties of this beautiful family. Plants are sent safely by mail to all parts of the country.

We acknowledge our indebtedness to Mr. Oliver Kitridge, of Allenton, Mo., for plants of the Jenny Lind strawberry. Mr. K. is establishing a large fruit garden at Allenton for the St. Louis market. We hope and believe he will meet with success in his enterprise.

THANKS.—We are indebted to Thos. H. Collins, Esq., of New Albany, Ind., for a barrel containing about twenty of the best varieties of potatoes, which we shall plant for the purpose of testing their adaptedness to the soil and climate of Missouri. Mr. Collins is one of our most enterprising and intelligent farmers and is extensively engaged in the cultivation of the potato for the New Orleans market, which he finds to be a profitable branch of farming.

☞ We are indebted to F. Mock & Co., of Lexington, Mo., for a number of fine apple trees of the following varieties, viz: Missouri Pippin and Huntsman's Favorite. We have also received from them specimens of the fruit of these varieties, and also of Smith's Favorite. These are all seedlings and have never before, we believe, been brought into notice. From the specimens sent us for examination we can say that they are valuable and deserve general cultivation. At some future time we may publish engravings and descriptions of them. Messrs. Mock & Co. have trees of these varieties for sale.

APRIL 11th, 1859.

EDS. VALLEY FARMER:—I notice a mistake in the communication I sent you. It occurs in Mr. Clay's enumeration of the advantages of in-and in breeding. It is printed, "It reduces the bone and gives to a certain extent more firmness and symmetry." It should be more fineness and symmetry. I wish also to correct an error I made in omitting the g in spelling Mr. Colling's name. The inadvertence is the more unaccountable to me, inasmuch as I essayed to correct your spelling, and had before me at the time of writing "Youatt's Treatise on Cattle," in which the name is spelled correctly.

E. S. WASHINGTON.

NEW ALBANY TILE WORKS.—We direct the attention of those interested in land draining to the above advertisement in this number. Many are wishing to drain their land, but say they don't know where they can obtain the tile. This establishment is situated on the Ohio river, and the tile can be promptly shipped to any part of the West at very cheap freight. Mr. Collins, the proprietor has about 100 acres that have been drained, and claims that he has obtained the most profitable results from the outlay. His experience accords with that of every other gentleman who has tried underdraining—that as an investment there is none which will pay a better per cent. in return for the outlay. That it will be extensively adopted in the West at some future day there can be no doubt.

NEW YORK STATE FAIR.—Our thanks are due to Col. B. P. Johnson, Secretary of the New York State Agricultural Society, for a copy of a list of the premiums and the regulations, &c. The annual fair will be held at the city of Albany, beginning on the 4th day of October, and will continue four days.

CHESTER WHITE HOGS.—Those wishing to improve their stock of Hogs are referred to the advertisement of H. L. Brown in this number. Judge Brown is one of our most enterprising and reliable farmers, and our subscribers may expect to get the pure breed from him. We have frequently been asked our opinion in regard to the best breed of hogs for western farmers and we have no hesitation in saying that we believe the Chester White to be superior to any that we are acquainted with. They attain maturity at an early age, fatten readily when young, grow to a large size, are hardy, have an abundance of hair, and in all respects are just the breed for the farmer.

THE NEW YORK WEEKLY.—Such is the title of a large double quarto weekly paper which we find upon our exchange table, published in the city of New York by A. J. Williamson at $2 00 per year. It is devoted to useful knowledge, romance and amusement, and from the number before us we infer that it is one of the best of its class in the United States.

The Opal.

We have received two or three numbers of an interesting monthly publication under the above title, conducted exclusively by the patients of the New York State Lunatic Asylum. As the State makes no appropriation for a library for the use of the unfortunate inmates of this institution, this work is established in part to compensate for that deficiency, and to extend a knowledge of the wants of those residing there, to authors, publishers and booksellers, &c., from whom contributions will be thankfully received.

The work is interesting and valuable in itself. Many of the pieces are written with marked ability, but occasionally we notice in them the evidences of the peculiarities of the minds of their authors.

Terms, $1 00 a year. Address Opal, New York State Lunatic Asylum, Utica, N. Y.

REPORT OF THE KENTUCKY STATE AGRICULTURAL SOCIETY.—We acknowledge our obligations to Robert W. Scott, late Secretary of the Kentucky Agricultural Society, for a volume of the report. It is a neatly executed work of 640 pages, and gives evidence of the industry and ability of the Secretary in its preparation and arrangement.

ST. LOUIS MARKET.

(WHOLESALE PRICES.)

WEDNESDAY, April 27th.

Flour, per bbl., $5 75 @ 6 75; Wheat, per bush., $1 10 @ 1 15; Corn, per bush., yellow, 75 cts. @ 78; Corn, white, 80 cts.; Oats, per bush., 62 cts. @ 66; Potatoes, per bush., 85 cts. @ $1; White Beans, 70 cts. @ $1 15; Dried Fruit, Apples, per bush., $2 15. Peaches, $3 20; Hungarian Grass Seed, per bush., $2: Hemp, per bale, $97 @ 100; Tobacco, per 100 lbs., $3 50 @ 8 55; Hay, per 100 lbs., 95 cts @ $1 05; Hides, per lb, 17 cts. @ 17½; Sugar, per lb, 6¼ cts. a 7; Molasses, per gal. (reboiled), 35 1-2 cts.; Sugar House syrup, per gal., 48 cts. a 51; Whiskey, per gal., 241-2 cts.

At the solicitation of a large number of our subscribers, we commence with this number and intend giving in each succeeding one an epitome of the leading articles of produce and groceries of the St. Louis market up to the latest dates before going to press.

Illinois State Fair Premiums for Bes Farms, Nurseries, &c.

The following is a list of the premiums offered by the State Agricultural Society for the best farms, nurseries and groves which shall be entered for competition. It is hoped that these entries will be numerous:

For the best improved and highly cultivated Farm, not less than 500 acres	Gold Medal
Second best	$15
Best improved and highly cultivated farm not less than 160 acres	Gold Medal
2nd best	15
Best improved and highly cultivated farm, not less than 40 acres	Gold Medal
2nd best	15
Best arranged and economically conducted prairie farm	Gold Medal
2nd best	15
Best grove of cultivated timber on the prairie	Gold Medal
2nd best	Silv. Medal
Best arranged and cultivated nursery of fruit and ornamental trees, shrubs and plants	30
2nd best	10
Best arranged and cultivated nursery of the various fruit trees	20
2nd best	10
Best arranged and cultivated nursery of grafted apple trees, from 1 to 4 years old	20
2nd best	10
Best show of one and two year old grafted or budded apple trees	10
2nd best	5

The committee will be governed by the general arrangement, cultivation, thrift, pruning and training of trees and shrubs. All competitors are required to furnish the committee at the time of examination, or before the award, a written statement of the mode of the preparation of the nursery grounds—the manner of cultivation, mode of pruning trees, shrubs and plants in their respective nurseries.

All persons who desire to compete for the above premiums must communicate their intention to S. Francis, Corresponding Secretary, Springfield, Ill., by letter, previous to the first day of July, so as to give the committee full time to examine the farms, nurseries and groves to be entered.

AWARDING COMMITTEE.—Benj. F. Johnson, Urbana; Dr. E. H. Clapp, Peoria; Chas. H. Rosenstiel, Freeport.

Premiums on Wheat.

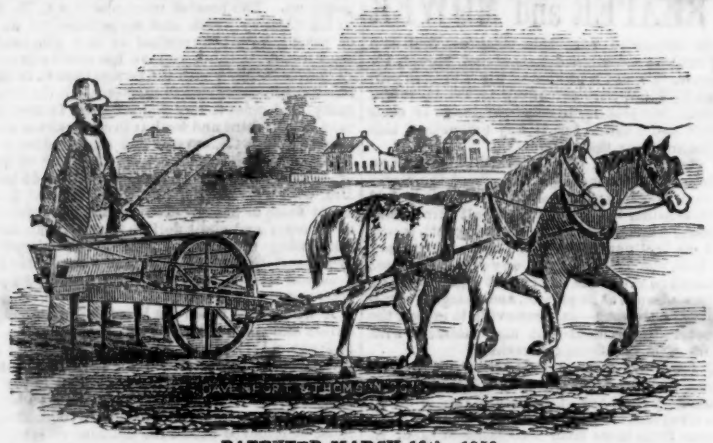
The Millers of St. Louis offer the following premiums, to be awarded at the next annual Fair to be held at St. Louis, September 26th, 1859. Entries to be made between the 16th of September, '58, and 1st September, '59.

For the largest and best crop white Fall Wheat:	
First premium	$125 00
Second do	75 00
For the largest and best crop red Fall Wheat:	
First premium	125 00
Second do	75 00
For the largest and best crop blue Stem Wheat:	
First premium	125 00
Second do	75 00
For the largest and best crop golden Chaff Wheat:	
First premium	125 00
Second do	75 00
For the largest and best crop Spring Wheat:	
First premium	125 00
Second do	75 00
For the largest and best crop Club Wheat:	
First premium	125 00
Second do	75 00

The Wheat to be brought to the St. Louis market, and samples to be exhibited at the Fair. The Committee to be satisfied with testimony of the number of bushels raised, and that the crop was raised by the exhibitor, and upon one farm.

CONTENTS NO. 5.

YOUNG AMERICA GRAIN DRILL.



PATENTED MARCH 16th, 1858.

The above cut represents a valuable improvement in Grain Drills, adapted to Drilling in Wheat, Rye, Oats, Barley, Buckwheat, Rice and Hemp, and sowing Flax, Clover, Timothy and Millet seed without change of fixtures For SIMPLICITY, DURABILITY and CHEAPNESS it has no equal.

The subscriber having purchased the exclusive right of manufacturing and selling the above Drill in that portion of Missouri south of the Missouri River, Nebraska Territory, and the State of Michigan, is prepared to fill all orders for Drills at Canton, Mo., or will sell State and County Rights. Orders will also be received by D. LANDRETH & SON, No. 18 South Main Street, St. Louis, Mo., where one can be seen on trial. Price $40, and Drill warranted to give satisfaction.

May '59. J. HARTJE, Canton, Mo.

WILSON'S ALBANY STRAWBERRY

I have for sale several thousand plants of this unsurpassed strawberry. Having fruited it in the West, I have no hesitation in stating, that in point of size, productiveness, hardiness and general good qualities, it stands at the very head of the list of strawberries for the West. For market purposes it has no equal.

PLANTS WARRANTED GENUINE.

April is the very best month of the year for transplanting it. The plants are now growing in my nursery, and roots consequently fresh and sure to live.

PRICE, $4 PER 100 PLANTS.

ALSO FOR SALE,

Peabody's Seedling Strawberry.

Plants originally obtained from Mr. Peabody of Georgia. Persons wishing to try this new seedling, (the same which was engraved for the Patent Office Report for 1856,) can be sure of obtaining the genuine plants from me. Price $4 00 per 100. I have also a few thousand plants of McAvoy's Extra Red for sale. Price $2 00 per 100.

Plants carefully packed and delivered to any Express Office, or elsewhere, in St. Louis, free of charge.

CAREW SANDERS,

April. ST. LOUIS NURSERY

R. A. ALEXANDER'S

Sale of Short Horns, &c.

R. A. Alexander's 5th Annual Sale of Short Horned Cattle, &c. will take place at Woodburn Farm, Woodford County, Ky., on the first Wednesday in June next, (it being on the 1st day of the month,) when a number of very superior young Bulls and Heifers will be sold; also some South Down Sheep from imported Stock.

Woodburn Farm adjoins Big Spring Station, on the Lexington and Frankfort Railway, being 15 miles from the former and 10 from the latter place.

Catalogues will be ready one month previous to the day of sale, and may be had on application to R. A. Alexander or S. N. Johnson, Spring Station, Woodford County, Kentucky. may'59.1t

GEO. HUSMANN. C. C. MANWARING.

HERMAN NURSERY,

HUSMANN & MANWARING, Proprietors.

Herman, Mo.

We take pleasure in informing our customers and the public generally, that we have much increased our stock in trade, and are now prepared to offer for the coming fall and Spring a large and complete assortment of Fruit and Ornamental Trees and Shrubs, comprising the choicest varieties of

Apples, Pears, dwarf and standard, Cherries, Peaches, Plums, Apricots, Almonds, Quinces, Grapes, Currants, Gooseberries, Raspberries, Strawberries, Lawton blackberries, Shade and Ornamental Trees and Shrubs, Evergreens, Vines & Creepers, Roses, Dahlias, Verbenas, Chrysanthemums, Peonies, &c., &c.

New and rare Seeds, Scions of Fruit Trees, Seedlings and Cuttings of Ornamental Trees, Shrubs, &c.

Most of the varieties were tested here and have proved successful in our soil and climate, and all are Warranted true to name.

The superior qualities of our soil for fruit culture are too well know to need mentioning here.

We take pleasure in informing the Grape Growers that we have now a fine stock in hand of those superior new Wine Grapes, Norton's Virginia Seedling and Lenoir, which are destined to become, by their sure bearing and fruitfulness and their superior qualities for Wine, one of the great sources of wealth of our favored State.

Descriptive Catalogues sent gratis to all applicants.

Orders directed to us personally, or to our traveling agent, Mr. Isaac Waring, will be promptly and carefully filled. HUSMANN & MANWARING.

HERMAN, August 1st, 1858.tf.

T. W. USTICK,

Plain and Ornamental Job Printer,

78 PINE STREET,

ST. LOUIS, MO.